







----- THE HYPHENATION OF THE VOID -----

From Eastern Ecology to Western Architecture

Rosalie Hyun-Kyung Kim

Submitted for the degree of PhD in Architecture (Architectural Design)

The Bartlett School of Architecture, University College London

July 2011

## Abstract

This thesis explores the cultural cross-fertilization between the orient and the occident by studying the eastern concept of the void that brings all components of the universe into a fluid continuous whole. This void is not in binary opposition to the full as in western dualism but rather co-exists with the full in a dynamic balance and complementary position following the Taoist philosophy. It is thus essentially characterized by its perpetual mutation, its transience. In this perspective, the oriental void emerges as a set of connections that incessantly evolve through time: the hyphenation of the void.

My research proposes to incorporate this interpretation of the oriental void into the occidental architectural approach. In this perspective, it develops the idea of conceptual and material hyphens that are familiar images to western culture and that also provide tangible and material expressions to the hyphenation. Conceptual hyphens serve as a sensible metaphor for the elusive principles of the void while material hyphens give materiality and palpability to the abstract notion of the void. These definitions are not mutually exclusive so that a hyphen can be both conceptual and material at times. Hyphens are then used as design devices in the architectural practice of the void. Their combination generates the architectural projects' narratives, material substance and, affects their visual representations.

The subsequent architecture of the void appears as an organic entity which grows and decays through its endless interactions with the surrounding environment. The latter is not restricted to the usual urban and architectural conditions but expands to socio-cultural, economical and political parameters. This architecture is thus always in the process of becoming amid a wide ecosystem and prompts the awakening of its users to the present moment in the current situation. In consequence, it generates an ecology of the void where architecture is experienced in the Heideggerian sense as a built thing that enables its users to dwell in unison with the universe.

The issue of hyphenation is in fact a reflection on my own status an in-betweenener drifting in the east-west intercultural flow of our nomadic contemporary society. The thesis represents, therefore, an investigation into my personal way of life.

## Acknowledgments

This PhD comes as a continuation of the MArch course undertaken at the Bartlett back in 2001–2002. My sincere gratitude goes to my then mentor Barbara-Ann Campbell-Lange and Professor Peter Cook, who suggested I pursue this line of studies and gave me their full support and advice to start this research project.

As the PhD developed, many people assisted me intellectually, technically or practically during these years and I would like to take this opportunity to thank, among many others, Jane Rendell and Penny Florence for offering the opportunity to participate in the Bartlett/Slade Summer event and for their constructive observations on the *Sited Moss* installation, Nadia Mounajjed from Sheffield University for her stimulating discussion and pertinent remarks during our collaboration on the *Sited Moss* installation, Olivier Goubault from the environmental association La Coordination Senne in Brussels who provided helpful hints during my quest for a site in Brussels, Toby Frenzen for his precious expertise on making short videos on the oriental void, and my fellow students Christianna Ioannou and Christos Papastergiou and their Telling Places committee team for inviting me to be part of the Telling Places Exhibition.

I am also very much indebted to André Toussaint from the Unité de Phytotechnie tropicale et Horticulture and particularly to Roger Paul and Bruno Campanella from the Laboratoire de Toxicologie environnementale at the Unité de Biologie végétale, from the Faculté Universitaire des Sciences Agronomiques de Gembloux in Belgium, for answering all my requests with great enthusiasm and their invaluable knowledge along with making crucial suggestions for the viability of *Ruining a Ruin*.

To my reflections on the in-between oriental and occidental culture, indirect contributions were made by colleagues I met during my professional career in Seoul (Pr Yi Jong-Ho and Pr Kang Joon-Hyuk from Studio META<sup>1</sup>) and Paris (Mark Goulthorpe). Discussions and works on weathering and sustainability made with my students and teaching colleagues at Kingston University also enriched my thesis and projects.

Above all, I am truly grateful to Jonathan Hill, my principal supervisor, for his guidance, advice and supervision throughout my research. He provided insightful feedback, critical comments and unwavering encouragement without which this PhD wouldn't have been completed. I also benefited from Yeoryia Manolopoulou, my second supervisor, who kindly offered me opportunities to present my work and helped me keep track of my objective by suggesting alternative approaches. It was an extraordinary experience working with them.

For reading parts or early drafts of the thesis and giving their commentary, my special thanks are addressed to Wendy Toole, Luk Darras, Daria Neklesa-Ford and Kathryn Humphreys. My beloved families in Belgium were also a constant source of inspiration, indulging me with their patience and their love and raising my spirits when gloominess loomed on the horizon. Finally, there are not enough words to express my deepest gratitude to Benjamin Darras for his unconditional support and motivation on all fronts since the very beginning of my work. His continuous thoughtfulness helped me keep my sanity and I sincerely thank him for bearing with me to the end.

For granting me a scholarship to undertake this research, I also would like to thank the British Council and the Royal Belgian Benevolent Society (RBBS).

## Content

<b>Abstract</b> .....	4
<b>Acknowledgments</b> .....	6
<b>Content</b> .....	8
<b>Introduction</b> .....	14
1. My identity in-between culture .....	15
2. Intentions.....	17
3. Thesis structure.....	17
3.1 The Void in East and West .....	17
3.2 Hyphens.....	19
3.3 The practice of the void .....	21
<b>I. Theory of the Void</b> .....	24
1. The Hyphenation of the Oriental Void and Chinese Traditional Landscape Painting.....	27
1. The void and the full.....	27
1.1 Components .....	27
1.2 Noumenal and phenomenal void .....	29
1.3 Three key principles and the space-time continuum .....	29
2. Origin of Chinese traditional landscape painting .....	31
3. Chinese landscape painters .....	31
3.1 Professionals .....	31
3.2 Literati .....	33
4. The literati painting method .....	33
5. Chinese landscape painting and the oriental void .....	35
5.1 Brushstroke – Vital breath .....	35
5.2 Mountain-water composition – Yin/Yang bipolarity .....	37
5.3 Fifth dimension – Space-time continuum .....	39
5.3.1 Perspectives and blank gaps .....	39
5.3.2 Materiality and format of painting.....	41
5.3.3 Inscriptions and seals .....	41
6. Cultural exchange between China and Europe in the seventeenth and eighteenth centuries.....	43
6.1 Western influence on Chinese landscape painting .....	43
6.2 Misconception of Chinese landscape painting.....	45
7. Conclusion.....	49
<b>2. The Oriental Architecture of the Void</b> .....	51
1. Architecture according to Taoism.....	51
1.1 Nature: horizontality and permeability .....	53
1.2 Void: impermanence or transience.....	53
1.3 Passage: progressive sequence and interdependence.....	55
1.4 Bipolarity: complementarity and flexibility .....	55
1.5 Incompleteness: asymmetry and imagination .....	55
2. Etymologic influence on the oriental concept of space and time...55	
3. Architecture according to the oriental concept of space-time .....	57
3.1 Cyclic time and boundless space .....	57
3.2 The present, the practice of indifference and the multiplicity ....59	
3.3 Occidental variation of the oriental <i>Jian</i> .....	59
4. Conclusion.....	61
<b>3. The Occidental Void</b> .....	63
1. The void in occidental culture .....	63
2. Architecture of the full .....	65
3. Reading Heidegger.....	65
3.1 'The Thing' .....	67
3.1.1 The Jug and the void.....	67
3.1.2 The Fourfold .....	67
3.2 'Building Dwelling Thinking' .....	67
3.2.1 Building Dwelling as manner of being .....	67
3.2.2 Thinking as awakening .....	69
3.2.3 Architecture as built thing.....	69

4. Heidegger in the light of the oriental void.....	69	3. The English Picturesque Landscape Garden.....	105
4.1 Heidegger's void .....	69	1. Pittoresco .....	105
4.2 The oneness of the Fourfold .....	71	2. Ideal landscape painting in southern Europe.....	105
4.3 Building Dwelling Thinking as the becoming.....	71	3. Picturesque landscape garden.....	107
4.4 Potency and actuality as virtual and actual space .....	71	3.1 Early picturesque garden .....	107
5. The influence of oriental void on occidental architecture .....	73	3.1.1 From historic landscape painting to early picturesque garden.....	107
6. Conclusion.....	75	3.1.2 William Kent and Stowe.....	109
<b>Conclusion of Part I.....</b>	<b>77</b>	3.2 Transition from early to late picturesque garden .....	109
<b>II. Hyphens .....</b>	<b>78</b>	3.2.1 From emblematic to expressive garden .....	109
1. The Moss.....	81	3.2.2 Lancelot Capability Brown and Stowe .....	111
1. The moss cycle .....	81	3.3 Late picturesque garden .....	111
2. Water .....	83	3.3.1 William Gilpin and the English countryside .....	111
3. Pollution.....	83	3.3.2 Knight, Price and the influence of ideal landscape paintings.....	111
4. Usage of moss .....	85	3.3.3 Repton and the living landscape .....	113
5. Moss and the oriental void .....	87	4. Chinese influence on English picturesque landscapes .....	113
6. Conclusion.....	89	5. The picturesque landscape garden and the oriental void.....	115
2. The Ruins .....	91	6. Conclusion.....	115
1. From Antiquity to the Middle Ages .....	91	<b>4. The Chinese Garden .....</b>	<b>117</b>
2. From the Renaissance to the eighteenth century.....	93	1. Confucian house and Taoist garden .....	117
2.1 Ruins during the English picturesque .....	93	2. Literati gardens and the <i>Yuan Yeh</i> .....	117
2.1.1 Theory of association .....	93	3. Taoist influence .....	119
2.1.2 Ruins as moral and historic model .....	95	3.1 Quintessence and vital breath.....	119
2.2 John Soane and Ruins .....	97	3.2 Bipolarity and incompleteness .....	121
2.2.1 Crude Hints towards a History of my House .....	97	3.3 Tao in Chinese Rockeries.....	121
2.2.2 From representation of ruins to ruin of representations .....	99	4. Landscape painting influence .....	123
3. From the twentieth century on .....	99	4.1 Monochromatism .....	123
4. Ruins and the oriental void.....	101	4.2 Courtyard cell as space-time interval .....	123
5. Conclusion.....	103	4.3 Duration .....	125
		5. Chinese and English picturesque gardens .....	125



6. Conclusion.....	127	3.1 Moss mapping and sound equipment .....	168
5. Alexander Pope’s Grotto.....	129	3.2 Users' reactions.....	170
1. Context .....	129	3.3 Drawing as memento .....	174
2. First stage: nympheum.....	131	4. Sited Moss and the oriental void.....	186
3. Second stage: mineral museum .....	131	5. Conclusion.....	186
4. Pope's grotto and the oriental void.....	131		
5. Conclusion.....	133	3. Ruining a Ruin.....	189
Conclusion of Part II .....	135	1. Brussels as headquarters of the European Union.....	190
III. Practice of the Void .....	136	2. Committee of the Regions in the European Quarter .....	192
1. The Bank’s Barometer.....	139	3. Principles of Ruining a Ruin .....	198
1. History of the Bank of England .....	139	3.1 Garden Monoblock .....	198
2. The Tivoli Corner .....	140	3.2 Lithification into travertine .....	198
3. The Bank's Barometer.....	142	3.3 Garden Monolith and CoR .....	202
3.1 First phase: spatial manipulation .....	142	4. Components of Ruining a Ruin .....	202
3.2 Second phase: metaphoric translation.....	144	4.1 Building-growers/users .....	202
3.2.1 The Bank of England as moderator .....	144	4.2 Materials .....	204
3.2.2 Air pollution parameters.....	144	4.2.1 Growing seeds experiment .....	204
3.2.3 Monitoring air pollution.....	144	4.2.2 Lithification experiment .....	210
3.2.4 Principle of the Bank's Barometer .....	148	4.2.3 Living walls .....	212
3.2.5 Moss forecast.....	148	4.3 Bio-indicators.....	214
4. The Bank's Barometer and the oriental void .....	164	4.3.1 Flora .....	214
5. Conclusion .....	164	4.3.2 Moss .....	216
		4.3.3 Fauna .....	218
2. Sited Moss: Invading or Fading Architecture? .....	167	4.4 Weathering instruments .....	220
1. The Portico .....	167	5. Design development.....	230
2. Principle of Sited Moss.....	168	5.1 Initial study.....	230
2.1 The Portico as a spatio-temporal portal.....	168	5.1.1 Monoblock.....	230
2.2 The Portico as a spatial palimpsest .....	168	5.1.2 Ruin .....	230
3. Installation.....	168	5.2 Reciprocal influence – adjustment .....	236
		5.2.1 Monoblock.....	236
		5.2.2 Ruin .....	236
		5.3 Convergence .....	246

6. Representation of Ruining a Ruin.....	248
6.1 Method of representation .....	248
6.2 Influence of Chinese traditional landscape painting .....	248
6.3 Drawing panels.....	248
6.3.1 Scientific drawings .....	248
6.3.2 Evocative drawings .....	272
6.4 Appendix to drawing panels .....	306
6.5 Video and handscroll .....	310
7. Occidental portrayal of the oriental void .....	312
8. Conclusion.....	312
 Conclusion of Part III.....	 317
 Thesis Conclusion .....	 318
1. The hyphenation of the void .....	319
2. Void methodology .....	319
3. Architecture of the void.....	321
4. Ecology of the void .....	323
5. My hyphen-nation of the void .....	325
 List of Illustrations.....	 326
 Bibliography.....	 336
 Notes .....	 344



## Introduction

## 1. My identity in-between culture

'Rosalie' is a name I was given by chance. In the early seventies, my Korean parents landed in Brussels after a 23-hour journey from Seoul, South Korea. Culture shock hit hard especially on my mother, who was rushed into a foreign country by a husband she barely knew and had married a few days earlier in an arranged settlement. My father was better acquainted with the country since he had been studying in Leuven for a year or so. When their first child was born in Belgium, little did they know that a forename had to be legally assigned to the baby in a few days. Korean customs usually require advice to be sought from a specialist (a shaman, monk or wise-man) after the birth of a baby so as to 'calculate' and 'design' a proper name according to astrological charts. Considering the situation, my parents turned towards the Catholic calendar hanging in the room of the hospital. They borrowed the name of that day's patron saint, St Rosalie, for their daughter. In their mind, 'Rosalie' was a temporary or secondary name that would be overtaken by the Korean name, 'Hyun-Kyung', given a few weeks later by my grandparents following the traditional protocol. However, I grew up being called by both these names, 'Rosalie' by Europeans and 'Hyun-Kyung' by Koreans, for practical reasons – pronunciation, memorization and spelling being reciprocally difficult for each culture. 'Rosalie' prevailed until four years later when, upon finishing his studies, my father took his family back to Seoul. My occidental name disappeared then and there along with my French for their Korean homologues.

My real culture shock came about three years later when my father was to be relocated by his head office to a division branch in Belgium. He smoothly broke the news to me during a promenade, when he asked whether I remembered my 'other' name. As a six-year-old, it came as a surprise to me that I not only had another name but was also able to speak another language I had never heard of. That moment was the true beginning of an ongoing quest for my identity. After that, we moved and travelled a good amount of times in different European cities.

During that period, my younger brother and I learned French, Dutch and English at school while soaking up European culture outside our home. Simultaneously, we were taught Korean and brought up according to strict Korean rules at home by our mother. Whenever I quarrelled about home rules, my mother always replied by saying that I should look in the mirror. She wanted me to remember I was firstly an oriental, an oriental who lived in an occidental society. Yet in my mind, I felt the opposite. I rarely saw oriental pupils at my primary or secondary schools. Most of

my friends' hair was blonde, red or brown and they all had big blue, green, grey or hazel eyes. We would eat with knives and forks at lunch and speak in French the whole day. It was, in fact, very easy to forget about my own eastern features. I roughly went through my adolescence despising being Korean and anything related to Korean culture.

It is only when I went back sixteen years later to Seoul, as an intern in an architectural office, that I started to accept my 'Korean' side. Behaviours or ideas that were not easy to explain to a European were a natural matter of fact in Korea. For instance, various degrees of politeness are used in language in relation to not only people's age when discussed in a conversation but also to the age of people involved in that discussion. It was a relief not having to give reasons or find excuses and just doing things the way I was taught. It was a great experience living with my grandparents, taking the underground in a sea of black-haired frenetic look-alikes or singing absurd Korean pop songs with colleagues in a tiny room of a Norebang<sup>2</sup> five hours from a deadline.

On the other hand, Korea's strongly filial society convinced me that, as a woman, I wouldn't settle in Korea in the near future, the cliché of a male-oriented society still being valid, with spoiled sons carrying on the family name and most women happy to play supporting roles. Changes have happened in recent years, with more and more women becoming independent and privileging their work over marriage; but they still have a hard time, being shown contempt as 'money-obsessed workaholics', or pity, quickly labelled 'spinster' when past the age of twenty-five.

Thus, returning to Europe made me appreciate my bicultural heritage even more. This episode also released me from the desire of belonging somewhere that I harboured for a long time as we regularly changed cities, schools and friends. I finally realized that not belonging anywhere, or rather the freedom to choose where to belong, was a great asset. Things turned out to be a lot easier once I accepted this simple statement.

In fact, if one looks closer at my background, that in-between character goes further than being oriental in a western world. My father's family migrated from North Korea just before the civil war and the creation of the DMZ. As for Belgium, it is a country divided between Flemish, Walloons and a small German-speaking community.<sup>3</sup> I happened to be born and to live in a Flemish region while my mother tongue has always been French. This form of in-between/both/neither later evolved into a form of fleeting state that I now feel comfortable in. 'L'insoutenable légèreté de



l'être'<sup>4</sup> that I carried around during my younger years now became my world, my root: my 'floating cloud'.

After studying and working for several years in offices in different cities (Louvain, Torino, Seoul, Brussels, Antwerp, Paris and London), I decided to undertake a MArch in Architectural Design at the Bartlett where I had the chance to study alongside fascinating peers from all horizons. One thing leading to another, I decided to pursue those studies that are in fact indirect studies of myself. It could be said that time spent on this body of work is therefore the utmost selfish luxury.

## 2. Intentions

Technological and digital innovations of the post-industrial era accelerated the phenomena of multiculturalism and globalization. They facilitated the actual passage from sedentary societies to a nomadic lifestyle, while the 'Information Highway', better known today as the 'Internet', broke down all forms of boundaries to share diversified worldviews in a more fluid environment. Subsequently, the quantity of information increased exponentially each year, but this profusion of accessible data – found in books, conferences, TV programmes, CDs or the Internet – did not always guarantee the quality of its content. A critical mind became essential in filtering the authentic and accurate facts.

Today, oriental architecture and the oriental concept of the void seem less exotic, if not familiar, to occidental academicians and practitioners. In particular, the oriental void is thought to be represented by the bipolar model of Yin and Yang, the well-known complementary opposite: <sup>5</sup> feminine–masculine, receptive–proactive ... These notions are therefore interpreted in western architecture by a simplistic, contrasting juxtaposition of mass and void, where the oriental space is assimilated to the negative space, the void within the mass. This biased perception doesn't take into account the complex philosophy of the oriental void which offers the transient and ethereal qualities to eastern architecture.

As an occidental in mind and an oriental at heart, I want to detail and clarify this particular concept of the void and expose its precepts in relation to architecture. In this purpose, my thesis proposes to start analysing the Taoist void by exploring its link to Chinese traditional landscape paintings and eastern concepts of space. This will uncover the void's key principles of reciprocity, interiorization and mutation which will then be incorporated into the western thinking process to generate an alternative, more complex but creative approach to architecture.

## 3. Thesis structure

My thesis doesn't intend to be a comparative study between eastern and western culture but rather proposes to focus on their dialectical exchange by looking at the influence of one on the other. Therefore, my research is not presented in a chronological order but structured in three interrelated parts – the theory of the void, the hyphens and the practice of the void, in order to emphasize the continuous oscillation between parts. Each part is then subdivided into chapters that can be read in various combinations in relation to other chapters of the same or another part. In this manner, the whole thesis appears as a network of hyphens which can be re-organized in multiple manners following the reader's mind.

It is to be noted that the thesis generally designates Chinese culture when referring to oriental culture. Indeed, the common denominator among Chinese, Korean and Japanese culture appears to be the Chinese tradition that sets the original cannon, in regard to the artistic, architectural or philosophical fields. However, Japanese architecture is chosen to be analysed over its Chinese counterpart as it was safely guarded from foreign influence for many years thanks to Japan's insular position.

### 3.1 The Void in East and West

In the western world, the scientific recognition of the void arrived relatively late as Christianity excommunicated anyone and any theories that threatened its authority and God's omnipotence. God is perfect and therefore cannot make anything contradictory, and as He is the ultimate Creator He cannot create void – the vacuum or the absence of matter. Fear of being ostracized made some scientists and philosophers disappear underground while others denied their scientific research for the sake of their faith.

This situation was overthrown by the Paris Condemnations in 1277,<sup>6</sup> when Bishop Étienne Tempier declared that God's omnipotence is without limits; hence He 'can' create void. As a result, scientists and thinkers who held an anti-void position shifted their opinion to the possibility of void. However, it was only in the seventeenth century that the issue was openly debated and thoroughly investigated with the experiments of Evangelista Torricelli and Isaac Newton.

In ancient Greece, 'void' and 'space' seem to have originally designated the same idea. Pierre Duhem states:





Philosophers before Aristotle generally accepted the existence of something that was not a body but that was homogeneous and indefinite, in which three dimensions could be traced, and in which bodies were placed and moved; the atomists called it void [or vacuum], Kenon, and Plato called it space, Xora.<sup>7</sup>

Owing to this etymologic association, occidental architecture might find it difficult to consider the void in any light other than a spatial one. The void is usually perceived as the negative or residual space left between walls, floor and ceiling. These volumes of mass delimit the void by giving it a shape which can then be objectively measured in all directions. Architecture therefore designs the void indirectly by moulding its solid outer envelope.

In the oriental world, the void infiltrates and influences every facet of tradition, culture and society via diverse philosophies. In particular, Taoism considers the void as the fundamental origin of all being: immanent and impalpable, it allows both the containing and the defining of all things, gaining thereby a status in its own right. Escaping subsequently the foreseeable dichotomy, the void and the full join in a dialectical relationship whereby they penetrate and incessantly transmute each other – through the principles of reciprocity, interiorization and mutation – according to different phases in time. In this theoretical framework, the void appears as the original hyphen that connects all beings through a fluid space-time continuum and endorses all forms and shapes following its continuous interaction with the full: the hyphenation of the oriental void.

It is to be noticed that I choose the word 'void' over 'emptiness' to designate this oriental concept. For me, 'emptiness' inevitably evokes a duality, either 'empty of' or 'full of'. On the other hand, 'void' derives from my French mother tongue in which the word 'vide' suggests 'being empty' yet with a certain material palpability that is more appropriate not only to the Taoist philosophy but also to architecture.

Regarding the latter, Taoism and its concept of the void emphasize the importance of the transitory nature of all spaces. In fact, time and architecture echo each other, where time provides the context in which architecture exists, while architecture 'endows time with spatial intelligibility'.<sup>8</sup> Hence a single space can adjust and host circadian activities, enabling it to mutate and witness the passing trails of the day. For instance, aside from the kitchen, rooms in a traditional Chinese, Korean or Japanese house are 'functionless'. It is the furniture, which can be easily moved around, that defines the purpose of a room at a

particular time of the day. Hence the same room can be used as a dining area in the morning while being used as a bedroom in the evening when the bed sheets are laid upon the floor. This constant spatial adaptation to a series of evolving situations compares to the metamorphous energy embodied by the oriental void.

A comparable understanding of the void can be perceived in the occidental culture in Martin Heidegger's philosophical ideas developed in 'The Thing' (1950) and in their architectural interpretation found in his 'Building Dwelling Thinking' (1951). Those essays are then investigated for the purpose of relating the complex precepts of the oriental void to the realm of occidental architecture.

### 3.2 Hyphens

All these theoretical notions remain abstract and need a vehicle to transform them into architectural design devices: the hyphens. Just like punctuation, they act as an articulation that both joins and separates at the same time. They can be categorized into conceptual and material ones. On the one hand, conceptual hyphens bring together different ideas into one by combining their initial meanings into another notion. They can also be recurrent themes that appear as a common denominator among those disparate ideas. In that case, conceptual hyphens draw attention to a particular aspect of a given idea, which helps to bridge the gap to another one. On the other hand, material hyphens convert intangible theories into actual, concrete parameters or components assisting the architectural design.<sup>9</sup> In the particular context of my thesis, moss, ruin, English picturesque landscape, Chinese literati garden and grottoes not only belong but also contribute to the defining of the hyphenation.

Moss proves to be an essential hyphen to develop the architectonic qualities of the oriental void. The study of its micro/macro-biology highlights its porous structure, its ability to detect crevices and its adaptability to ever-changing environmental conditions. These properties reflect the spatial qualities of the occidental void but also the dynamic principles that regulate the oriental void. Furthermore, the usage of moss throughout history and its sensitivity to air and water pollution inspire both the narrative and the outcome of my architectural projects. Later in the thesis, the moss will instigate the experimental manipulation of various materials possessing similar characteristics, such as sponge, pellet or floral foam, which will then be used in the final architectural project.



On the other hand, moss has also an evocative power that is exploited by occidental landscape painters to symbolize decay in general and the decline of a civilization or human mortality in particular. It underlines the triumph of nature over the artificial creation. This impression is reinforced by ruins depicted in those occidental landscape paintings. If moss represents the active force that re-establishes the power of nature, ruins embody the resulting architectural decay that accompanies the fall of an empire. Therefore, an analogy can be drawn between those ruins and the moss, which offers another path to investigate the void described in eastern paintings.

In fact, ruins suit well the transitory nature of the oriental void. Ruins have the idiosyncrasy of blurring temporal boundaries between past, present and future, which allows quirky spatial associations to take place, as a sort of spatial palimpsest, merging oblivion and reminiscence, persistence and transience. They become a source for endless architectural cycles that replace the ultimate building by a succession of non-repetitive, irregular architectural compositions that appear and disappear one after another in a fluid continuum. Therefore, heterochronic ruins illustrate efficiently the void's precept of the becoming that allows a fluid evolution of situations.

So far, the moss epitomizes the principles of the Taoist void in palpable matter, while the heterochronic ruins represent the western architectural component reflecting the oriental void. In parallel, those hyphens are supported by new ones, consisting of the eighteenth-century English picturesque landscape garden and the Chinese garden.

They appear as a natural outcome from moss and ruins since both of their studies involve gardens in all forms and shapes. In fact, the passion for ruins reaches its pinnacle during the eighteenth-century picturesque, through its landscape paintings but, above all, through its gardens, which are adorned by a panoply of ruins, grottoes and other exotic follies. This thesis will show that principles found in picturesque landscape gardening are reminiscent of the oriental void's dictates.

Moreover, it is also during this period that cultural exchange flourishes between China and Europe, albeit in great confusion. In particular, Chinese gardens become fashionable and their design, based on principles of the oriental void, is adopted and modified on the whole to suit the taste of the eighteenth-century occidental lifestyle. In the midst of these Chinese and picturesque gardens the English garden's grottoes and Chinese rockeries emerge as potential hyphens. They both offer the fleeting characteristic of an in-between status – architecture/landscape,

artificial/natural, void/full – as well as embodying the occidental idea of the void as a negative space.

As the thesis progresses, all these hyphens will cross-fertilize each other by crossing one another's paths, through multiple interconnections and a feedback mechanism, in the midst of dynamic changing situations. As a result, this methodology shapes a self-emerging system made of hyphens, constantly attuned to an ever-fluctuating environment, truthful to the image of the oriental void where all things interact, combine and collapse before merging together again in perpetual movement. This variable configuration of the cloud reflects thereby the fleeting formation of the hyphenation.

### 3.3 The practice of the void

The previous hyphens are used to integrate the main concepts of the void, i.e. reciprocity/reversibility, interiorization and mutation, into the western design process through a series of architectural projects. They generate the project's narrative and/or act as a material catalyst that contributes to the building of the project. Like hyphens, my architectural work evolved in a multi-pronged manner, jumping from theme to theme, conceptual ideas, sketch drawings, pictures, reading and writing, to experimenting with materials or computer modelling. This rhizomic method offers the advantage of multi-tasking, developing different ways simultaneously, building an interrelated web, knowing that if one branch comes to an end, it will inform the shaping of the others without interrupting them. Thus, this thesis oscillates in-between theories, projects and actual outcomes of the projects like drawings, videos, pictures, etc.

The first project titled the *Bank's Barometer* uses the moss and its sensitivity to the surrounding pollution to interpret the concept of reciprocity of the void and the full. This project has been inspired by a guided walk along the Walbrook, a 'lost' river of London. This tour was organized by Jane Trowell from Platform, an interdisciplinary association acting to draw public awareness on environmental issues. Some of her pertinent observations triggered the idea for the whole concept for this project.

The next work is an installation called: *Sited Moss, Invading or Fading Architecture?*, made in the Portico of UCL. The purpose was to create a spatial palimpsest, generating an interiorization process of the void and the full by the user. This installation was made in collaboration with Nadia Mounajjed, a doctoral student in architecture of the University of Sheffield, who specialized in the virtual environment.

I.1-2

I.3

I.5

I.4

I.6

I.7

I.1 Charlie Paton, the *Seawater Greenhouse* (1992), Tenerife.  
I.2 Exploration architects, the *Sahara Forest Project* (2008).  
I.3 Philippe Rahm, *Domestic Astronomy* (2009), plan and section of the thermal zones of inhabitation.

I.4 Ibid., interior perspective of the apartment.  
I.5 Ibid., incandescent light bulbs providing both light and heat.  
I.6 Philippe Rahm, *Mollier Houses* (2005), air ventilation/hygrometric section.  
I.7 Ibid., view of the interior pool and bathroom.

The last undertaking consists in a main project called *Ruining a Ruin*, located at the heart of the European Quarter in Brussels. It is directly or indirectly supported by smaller 'satellite' works and attempts to integrate the time factor in its design and methodology. *Ruining a Ruin* brings all the previous hyphens together in accordance with the precepts of the void and the full in order to create my occidental allegory of the oriental void.

In the light of these projects, nature appears as an appropriate metaphor for the oriental void as it evolves in cyclic manner, always in the process of becoming, where all entities are interrelated into the oneness of the universe. It continuously changes with time, following its living organisms' natural growth or interaction with one another. By extension, nature reveals then a transitory realm epitomized in essence by its perpetual mutations fluttering between the visible and the invisible, the palpable and the impalpable. It is in this manner that nature evokes best the hyphenation of the void.

The practice of the void also enriches the current discussion on environmental issues. It proposes replacing remedial architecture designed regardless of the context, then formally, technologically or budgetarily adjusted to meet the ecologic requirements, by a sustainable architecture focused on the transitoriness of its void rather than on the systematic efficiency of its mass. This approach is already perceptible in sustainable projects like the *Seawater Greenhouse* and *Sahara Forest* by Charlie Paton and Michael Pawlin from Exploration architects, where waste is turned into resources, excess reinvested into useful assets. It can also be observed in Philippe Rahm architects' *Domestic Astronomy* and *Mollier Houses* that are conceived by converting the intangible physical, chemical and thermodynamic properties of light and air into architectural design devices.

The *Seawater Greenhouse* (fig I.1) is a project developed by Charlie Paton and consists of 'a greenhouse for arid coastal regions'<sup>10</sup> that generates as surplus clear water from seawater condensing on the metal grid of the building's front façade. Calcareous and salt deposits accumulating on these filters are turned into building materials while clear water is used for irrigation 'to restore barren land to biological activity'.<sup>11</sup>

The *Sahara Forest* (fig I.2) combines the former concept with another technology, Concentrated Solar Power (CSP), which 'involves concentrating the sun's heat to create steam that drives conventional turbines, producing zero carbon electricity twice as efficiently as

photovoltaics'.<sup>12</sup> In this manner, desert regions located by the sea could self-sufficiently produce their own energy and reverse their arid soil into fertile land. This type of long-term design supplants the remedial design with the 'restorative design'<sup>13</sup> by contributing in the reversal of defective or inhospitable sites into inhabitable ones.

The *Domestic Astronomy* (figs I.3–5) is a concept for an apartment developed by Philippe Rahm architects where the spatial layout is designed according to temperature, light and air convection movement rather than mundane functions. This approach triggers then a shift from a horizontal to a vertical way of living, encouraging a sensorial and instinctive inhabitation of space.

The *Mollier Houses* (figs I.6–7) are a tourist housing concept in the lake landscape of Vassivière, elaborated around the humidity issue within a house. The space is reconfigured according to hygrometry, air ventilation and water evaporation created by interactions between house, lake, seasons and users. The resulting architecture embodies the housing's sustainable strategy spatially rather than applying an existing HVAC system on a traditional housing model.

In those projects, Exploration architects used the environmental conditions to generate an evolving architecture that subsequently modified the local microclimate, topography and vegetations, while Rahm architects translated those variable conditions into architectural narratives that reassessed the habitual manner of inhabiting space. However, Exploration's projects were often located in isolated or environmentally drastic areas where human presence or interventions were scarce and limited. Alternatively, Rahm's projects presented the fluctuating environmental conditions in a static manner through a solid shell regulating the invisible air circulation and light dispersion.

The practice of the void extends their projects by providing a protean, organic and far-sighted architecture. Here, organic doesn't imply borrowing shapes and forms from nature but rather bio-mimicking its cyclical metabolism or features addressing specific issues in order to develop systems that are beneficial for architecture. This sustainable architecture thus appears as a living organism whose growth and decay require the tending care of its users. It is characterized by its continuous metamorphoses that respond not only to the constant evolution of its surrounding environment but also to the various needs of its inhabitants. The ensuing ecology of the void thereby enables the user to join and live in peace within the oneness of the universe.

# I Theory of the Void

- 1 The Hyphenation of the Oriental Void and Chinese Traditional Landscape Painting
- 2 The Oriental Architecture of the Void
- 3 The Occidental Void

This section of the thesis presents the oriental void in the conceptual framework of Taoism. In this respect, it proposes to clarify the abstract and confusing Taoist precepts of the void by observing their integration in Chinese traditional landscape painting. The ensuing understanding of the void will then be related to eastern traditional architecture in order to subtract the architectural directives of the void. Following a brief insight on the general occidental perception of the void, the thesis investigates ideas developed in Heidegger's essays 'The Thing' (1950) and 'Building Dwelling Thinking' (1951). In the context of my research, Heidegger's concepts appear as a western concern with the void which finds echo in the oriental void. They can therefore assist in incorporating the precepts of the oriental void into occidental architectural thinking. This philosophical similarity will then be contrasted with a concrete example of the impact of Japanese traditional architecture on occidental modernist architecture, bringing this section to a close.





# 1

## The Hyphenation of the Oriental Void and Chinese Traditional Landscape Painting

This chapter explores the void and its fundamental principles in the light of Taoist philosophy, gathering its essential components and their interactive dynamic as well as its physical and metaphysical significance. These complex notions are then related to Chinese traditional landscape painting's forms and contents that are infused with the void at their core. In this manner, subsequent visual outcomes illustrate in a more comprehensible way the abstract concepts of the void. A discussion on the east-west cultural exchange during the seventeenth century will close the chapter.

### 1. The void and the full

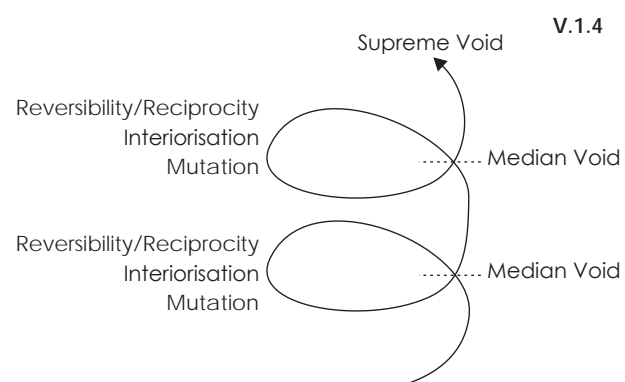
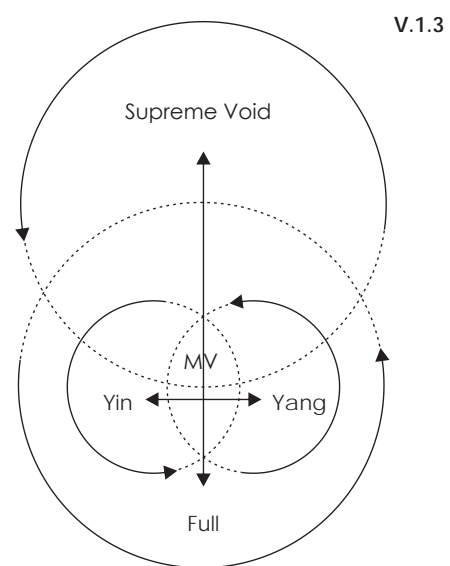
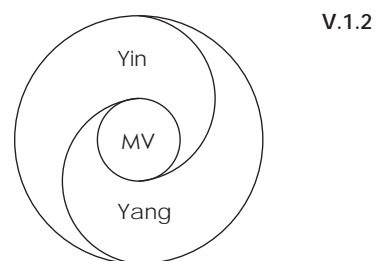
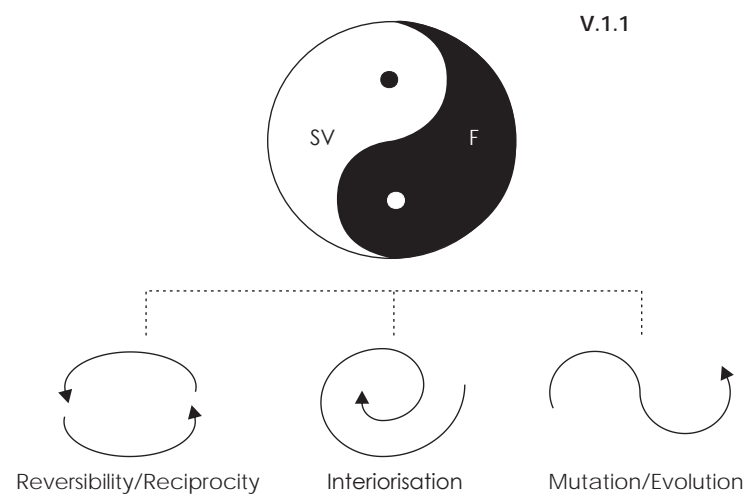
#### 1.1 Components

The oriental void plays a major and active role in eastern philosophy and daily life. Its cosmologic principles, regulating the ensuing Taoism, were gathered by Lao-Tzu, in his manuscript the *Tao Te Ching* (ca. 6th century BC) or *The Book of the Path of Virtue*, chapter 42:

*Le Tao d'origine engendre l'Un  
L'Un engendre le Deux  
Le Deux engendre le Trois  
Le Trois produit les dix mille êtres  
Les dix mille êtres s'adosent aux Yin  
Et embrassent le Yang  
L'harmonie naît au souffle du Vide médian<sup>1</sup>*

The Tao of the Origin engenders the One  
The One engenders the Two  
The Two engenders the Three  
The Three produces the ten thousand beings  
The ten thousand beings lean against the Yin  
And embrace the Yang  
The Harmony is born from the breath of the Median Void

Indeed, the void is not a nebulous, non-existing element but rather a dynamic and vibrant component, believed to be at the origin of all being; thus, it is referred to as the supreme void, the Tao.<sup>2</sup> The interpretation of the word 'Tao' has evolved over time, as it is a complex phenomenon to understand as a manner of being or discipline. Its first Latin translation by Jesuit missionaries referred to a 'sense of Ratio, or the Supreme Reason of the Divine Being, the Creator and Governor'.<sup>3</sup> Today, the Tao becomes a Chinese philosophical term that translates into



- V.1.1 Chinese symbol *Tai-chi Tu* or Diagram of the Supreme Ultimate with the three key principles of the void.
- V.1.2 Dynamic within the full component in the Diagram of the Supreme Ultimate.
- V.1.3 Taoist vertical and horizontal cosmologic movements.
- V.1.4 Chinese spiral timeline evolution.

'path' or 'way' of the Cosmos. It generally refers to the fundamental and indefinable oneness that underlies and unifies all things and events into one continuous flow of change. In this context, the Tao designates the supreme void (fig V.1.1).

Being the source of all life, it naturally generates the vital breath, also known as *Chi*,<sup>4</sup> the Chinese term for gas or breath, which represents the energy that animates all beings. The latter engenders in its turn the complementary opposite forces, the Yin and the Yang; the Yin being the passive force, receptive and quiet while the Yang is the active force, sharp and vigorous. The interaction of the Yin and Yang generates and rules all living creatures. Yet, this interaction is only made possible by the presence of the median void, an intrinsic part of the supreme void, which guides those two forces into the process of reciprocal becoming (fig V.1.2). This median void, inherent to the Yin-Yang combination and hence to all beings, constitutes the fundamental hyphen between the beings and the supreme void. Innate to all beings, the median void endorses multiple forms and appears as the common denominator, the joint through which the ten thousand beings also interrelate and cross-fertilize in endless configurations. This reveals a dynamic, fluctuating network of evolving hyphens connecting all beings into the oneness of the Tao: the hyphenation of the oriental void. In this hyphenation, all beings constantly mutate, grow and bloom into harmonious unison.

These cosmologic explanations can be illustrated by a dual movement: a vertical movement between the void and the full, intersecting a horizontal movement between the Yin and the Yang, located within the full (fig V.1.3). Besides, as a result of the very nature of the void, the two (Yin/Yang) equals three (Yin/Yang + median void) and the three equals one (the supreme void) in Chinese philosophy.<sup>5</sup>

## 1.2 Noumenal and phenomenal void

Next, the supreme void assumes two facets: the noumenal and the phenomenal. In fact, the noumenal void serves as the ontological foundation for Taoism, by encompassing simultaneously two meanings: *wu* as the origin of the universe in opposition to 'having', interpreted as 'nothing'; and *shū* as the original state towards which all beings have to aspire, interpreted as 'void'. The phenomenal void designates mostly the void as the concrete substance, existing within the very essence and evolution of all beings. These two views are not conflicting but interdependent. Therefore, the supreme void is not only initiating, but

also subsisting and transforming all living things; it is perceived as 'a nodal point made of the virtual and of the becoming'.<sup>6</sup> Its original condition ensures the good functioning of all beings – mutation, interaction, evolution, etc. – and since this functioning regulates all beings, it demonstrates the reality of the supreme void.

## 1.3 Three key principles and the space-time continuum

All the connections described above encapsulate, and concurrently are encapsulated in, the three key principles of the oriental void that are the process of reversibility/reciprocity, interiorization and mutation. As previously explained, the void and the full are not merely in a simple antagonistic position but rather belong with and complete each other, as stated by Lama Govinda:

The relationship of form and emptiness cannot be conceived as a state of mutually exclusive opposites, but only as two aspects of the same reality, which co-exist and are in continual co-operation.<sup>7</sup>

In fact, the void provides a space 'where the full can achieve its true plenitude',<sup>8</sup> by breaking the sterile structure of a rigid opposition. The supreme void penetrates the full through the median void, giving the opportunity for all beings to return to their original state, reversibility/reciprocity, and re-source themselves, interiorization, in order to evolve and become others, mutation (fig V.1.1). These processes follow one another in an endless cycle and form the three stages that enable all beings to attain their totality, their plenitude.

Furthermore, this reversibility/reciprocity aspect presented by the void includes the ability to stimulate qualitative exchanges between space and time. Indeed, if the living time is perceived as an actualization of the living space, then the void, by inserting a 'return' break within the continuous development of time, re-establishes the spatial quality in time through linking the subject to the original space. To illustrate this phenomenon, the Chinese timeline would be defined by a simultaneous double movement: the linear course of the becoming and the circular path of the reversibility/reciprocity and interiorisation process. However, these circular movements refer to the original return without repetitions; hence they are replaced by a spiral movement, directed upwards because they aim towards the supreme void (fig V.1.4).<sup>9</sup>

In this respect, the void can be assimilated to the Japanese notion of *Ma* defined as the intermediate between nothing and all,<sup>10</sup> an interval or

V.1.5

V.1.6

V.1.5 Li Tang, *Wind through the pine valleys* (1124).

V.1.6 Xia Gui, *Pure and remote views of streams and mountains* (ca. 1200).

intercalary spacing revealing the spatial in-between. It not only separates and links, but also installs respiration and fluctuation, instilling thereby a dynamic of time in the concept of space. A simple illustration for *Ma* is the silence on a music score. It divides and joins at once while introducing a gap within phrases that brings breathing and plurality of senses to the melody. Indeed, this suspended moment liberates the ruminating mind and connects it back with one's inner intuitive and spontaneous core. Music then resonates within the void, touching the soul of its listener. Hence, *Ma* both breaks and articulates the continuum into an ever-changing configuration through which space is assimilated to a form of time. This particular relation between void, space and time will be further detailed in the following chapter on the oriental space.

## 2. Origin of Chinese traditional landscape painting

Before focusing on landscapes, Chinese paintings mainly depicted the human figure. This was due to the Confucian influence that emphasized the moral role played by man within a society. The subject matter of paintings aimed at the elevation of the human condition, as described by Xie He, an art critic and painter of the Southern Qi (6th century): 'all paintings stand for poetic justice; lessons about the rise and fall of ministers over the course of one thousand years can be drawn from the paintings'.<sup>11</sup> His position was shared by Zhang Yanyuan, an art historian of the Tang dynasty (7th to 10th century), who argued that 'the art of painting exists to enlighten ethics, improve human relationships, divine the changes of nature, and explore hidden truths. It functions like the Six [Confucian] Classics and works regardless of the changing seasons.'<sup>12</sup> After the Han dynasty (3rd century BC to 3rd century AD), Buddhism quickly spread across China and artists begun illustrating the life of Buddha on earth by creating paradisiacal paintings. Thus initially landscape in paintings was merely exploited as background to portraits and religious or folkloric activities.

Landscape became a subject in its own right around the ninth century and steadily developed into the most popular theme during the Five Dynasties and Song dynasty (10th to 13th century). Those landscape paintings ranged from large-scale, powerful paintings to smaller poetical pictures. By means of various components and their relational position, landscape paintings could render a place, an intimate garden as well as a panoramic view of a natural environment.

They also provided a convenient illustration of historical, spiritual or legendary narratives since landscape could be interpreted at diverse levels according to its viewer's social and cultural dispositions. Political and religious authorities quickly exploited that potential to broadcast their subjective views and influence the population. For instance, landscape paintings were often exacted to represent a symbolic setting for the imperial government using the Five Sacred Mountains and the Four Great Rivers. A journey to these mountains and rivers had to be made by the emperor-to-be in order to demonstrate his dedication to the immortal gods of nature and receive from them the authorization to rule the country. In practice, as these mountains and rivers were located far apart from one another, the *Tai Shan* or the East Sacred Mountain in the Shandong province was the most visited by emperors. The *Feng-shan*, or mountain-worship, ceremony was carried out on the top and lower hills of the mountain as an offering ritual to Heaven and Earth that ensured the new empire's stability, strength and prosperity.

## 3. Chinese landscape painters

Chinese traditional landscape paintings can be mainly categorized into two artistic movements: the technically well-executed, detailed representation made by professionals and the subjective, imaginary representation made by literati.

### 3.1 Professionals

The first group is associated with the court painters, also known as professionals. These men came from an underprivileged social class, with no education and no future prospects. They were scouted at a young age by master painters who recognized their great aptitude in painting or learning. They were quickly put in apprenticeship to become artisan-painters and worked on commissions, which allowed them to earn a proper living. If their talent grew to an exceptional level, they were promoted to the court and invited to become members of the prestigious imperial academy. They excelled in realistic representation of subject matter and were particularly adulated from the ninth to the twelfth century during the Tang and Song dynasties (figs V.1.5–6).

V.1.7

V.1.8

V.1.7     Li Cheng, *A solitary temple amid clearing peaks* (ca. 960).  
V.1.8     Huang Gong Wang, *Stone cliff at the pond of Heaven* (1341).

### 3.2 Literati

The second group of landscape paintings is associated with literati, *wenren*, also known as amateurs. These men came from an erudite class who lived in the Confucian tradition and were groomed from birth for an administrative or military post in the imperial palace. Indeed, these professions would ensure them and their family not only financial stability but also respect in the hierarchical society. As these sought-after positions were only accessible through national entrance exams, those who failed had no other choice but to retrain either as teachers, writers, doctors, scribes, etc., or as amateurs in the art field if they had enough monetary support: the literati.

In this context, the literati had poor painting skills since they didn't train as experts and painted foremost for pure pleasure. They were well aware of their limitations and compensated by contesting the purely technical and functional paintings of professionals. To their eyes, paintings didn't have to be reduced to the duty of communicating political or religious ideals to the population. True paintings were wholesome, unadulterated by historic narratives or outstanding characters, and the art of painting had to be practised as a non-lucrative activity. For these reasons, landscapes of rivers, hills and trees promptly became favourite subjects as they could be easily suggested and rendered without elaborate painting techniques (figs V.1.7–8).

Furthermore, the literati's intellectual background also gave them an advantage over professionals. Because of their higher level of education, the literati were naturally acquainted with calligraphy and poetry, which, along with painting, formed the three arts of the brush, known as 'the Three Perfections' or *Sanjue*.<sup>13</sup> It was a way in which to distinguish themselves from the professionals who were versed in painting skills alone. It enabled them to paint landscapes inspired by prose and poems, and gave them a greater liberty of imagination than merely reproducing existing nature. This practice began during the northern Song period (10th to 12th century), which saw the rise of literati-artists.

In the late southern Song period (13th century), China surrendered after extensive and tedious wars and fell completely to the Mongol empire. For the first time in its history, China was entirely ruled by an invader. The Mongols were not used to ruling such a complex empire and ended up integrating the Chinese administrative system into their governing politics. Nevertheless, they ignored or ill-treated Chinese scholars, who were bitterly degraded from their prominent status to that of low-level officers.

Worse, the next periods of the Yuan, Ming and Qing dynasties were spattered with corruption and the abuse of authority, putting the literati under moral pressure. As a result, Chinese scholars withdrew from the public scene and established a clandestine network to help one another and preserve Chinese cultural practices. This social movement enabled the literati-amateurs to spread and grow strong during this dark era. Their paintings reflected their disillusion and longing for tranquillity by using symbolic elements in landscape composition.

The literati's lack of knowledge in painting generated a freedom of action not thinkable for professionals. Their approach to painting was not bound by academic theories or techniques and was therefore more spontaneous, intuitive and experimental. This group contributed the most to the successful spread of landscape paintings, especially during the Song dynasty (10th to 13th century).

### 4. The literati painting method

In the eighth century, the celebrated painter Zhang Zao stated about his art:

*Extérieurement, j'ai pris pour maître la nature,  
et intérieurement, j'ai suivi les sources de mon coeur.*<sup>14</sup>

On the outside, I have taken nature as my master,  
and on the inside, I have followed my soul.

This conveys the idea that an artist should learn and take his inspiration from nature, yet the painting should reflect his personal version of nature. In other words, the vital breath of nature, i.e. its vivacity, authenticity or living energy, cannot be conveyed by a flat realistic painting that purely observes and depicts the surface of all things. Rather, one must confide in one's own imagination to understand the depth of reality and execute the painting from within. In fact, a good painting balances the objective and subjective by showing nature both as it exists in reality and as it exists in the painter's mind.

On this subject, the eighteenth-century art theoretician Pu Yen-t'u added that the *Yi* or 'idea, desire, intention' is crucial to render a landscape alive with the vital breath, and for a painter this desire or intention precedes the execution.<sup>15</sup> This declaration refers to the *I-Ching*, the *Book of Changes* (ca. 3rd century BC), where the '*Yi* designates the trigger that prompts all transformations'.<sup>16</sup> In this manner, the vital breath that guides the *Yi* from the painter's mind to his hand is then transferred onto the painting through the resulting brushstrokes.

V.1.9

V.1.10

V.1.11

fei-pai

kan-pi

- V.1.9 Flowers, leaves and trees shaped by simple outlines.
- V.1.10 Rocks rendered by texture made with repeated brushstrokes.
- V.1.11 Shitao, *Plum branches in bloom* (17th century).



In order to achieve this, the painter has first to grasp the idea of the landscape – *deyi* – in his mind.<sup>17</sup> This phase requires the artist to stand in front of a panorama to fully soak up the view. The method corresponds to the principle of *wu-wei* or non-action advocated by the Tao. This consists in the action of letting things follow their natural course so that, in this manner, the observer lets himself be carried into the flow of all things, merging thereby into the oneness of the Tao.<sup>18</sup> In this context, the painter's consciousness slowly awakens to the landscape's rhythm and essence and appropriates them by drawing a mental outline of the scenery. Then the painter layers this image with his personal emotions and experience to create his final landscape. This contemplative step takes time, and some painters are said to have spent weeks, even months, on it, returning relentlessly to the panoramic view for several hours a day.

The next phase is to sketch the idea – *xieyi* – on the painting.<sup>19</sup> The landscape imagined by the artist is painted out for others to see. It is usually achieved in a short period of time, often in one session, for two main reasons. First, the use of the ink-water technique makes ulterior touches in the painting difficult. Then, the artist bypasses lengthy, preparatory sketch work since he has already built up a mental image of the landscape to be drawn. The result is not just a mere rendering of the existing landscape but rather a personal interpretation that expresses the painter's personality and philosophy.

If this step is done successfully, the viewer will comprehend the idea – *huiyi* – in his turn.<sup>20</sup> This helps him to transcend the painting and grasp the meaning that lies beyond the painted scenery. In this respect, the literati painters follow the three principles of reciprocity, interiorization and mutation of the oriental void. These are reflected in the mental process undergone by the artist whereby the landscape finds a resonance in the artist's soul, and is then re-evaluated and transformed into a new landscape through meditation and imagination. The next paragraphs will show that the oriental void affects not only the literati's methodology but also the outcome on a symbolic, aesthetic and conceptual level.

## 5. Chinese landscape painting and the oriental void

Chinese landscape painting started originally with realistic themes and renderings that served practical purposes for eminent political or religious figures. With the rise of the literati movement, landscape painting shifted to a more spiritual approach, moving away from being a mere aesthetic

backdrop and becoming a microcosm that provided an authentic space for potential life, in the image of the macrocosm.<sup>21</sup>

In this perspective, Chinese paintings transferred the components of a cosmologic philosophy onto their canvas. The void, as the fundamental hyphen, was integrated into every aspect of the work, from the gesture of the painter, the brushstrokes, up to its composition. The vital breath, *Chi*, was expressed through the virtuosity of the brushstroke which embodied the concept of *Li*, the immanent quality or quintessential lines characterizing a thing. The Yin and Yang were perceptible in the complementary themes and rendering of the painting. The void also grew beyond the painting canvas to allow a true communion between the painter, his work and the viewer, an experience also called the fifth dimension by Cheng.<sup>22</sup> Located at the heart of the painting, this void brings all the painting's components into an organic unity.

### 5.1 Brushstroke – Vital breath

The principal quality of the painting relies on the brushstroke, which has to reflect the void's one and multiple character by demonstrating a strong inner cohesion while offering a wide range of lines. Different types of brush are used for different types of line. For instance, one variety of brush uses hairs densely packed in concentric circles with a fine tip to its end. This allows its plump body to hold enough ink and water to draw a long line. This line maintains the same width in all directions when the brush is held perpendicular to the paper while moving along the paper. The line's width can be modified by applying a lighter or heavier pressure on the brush. Different types of brushstrokes can be achieved by varying the angle between paper and brush.

All of these – ink (concentration/dilution), lines (fullness/thriftiness) and movement (pressure/interruption) – must be appreciated together so as to grasp, from the brushstroke only, the *Li* and the breath that animate all things. This importance given to the brushstroke or line is also related to Chinese calligraphy. In fact, Chinese ideograms represent concrete things by the essential lines that typify them. Therefore, Chinese painters started by shaping objects by accentuating their outline while simultaneously washing colours within that outline. These were simplistic traditional sketch lines that needed improvement (fig V.1.9). By the tenth century, this painting style was slowly replaced by another technique that rendered texture by repeated brushstrokes (fig V.1.10).

V.1.12

V.1.13

V.1.14

\_\_\_\_\_ Diluted/  
concentrated

\_\_\_\_\_ White/black

\_\_\_\_\_ Dry/wet

V.1.15

- V.1.12 Dong Qichang, *The Quingbian mountains* (1617).
- V.1.13 Shan Shui, Chinese ideograms standing for for moutain and water.
- V.1.14 Shitao, *Painter-fisherman* (17th century).
- V.1.15 Wang Shen, *Serried hills over a misty river* (ca. 1100).

Depiction of form or volume by the *Li* was conveyed through the *yin-hsien*, or invisible-visible technique. It consisted in suspended or omitted lines that enabled the subject to hold its breath and mystery, bringing life to the surface of the canvas. Their brushstrokes, called *t'sun* – literally meaning wrinkles – are rippled with hooks, angles and curves and enclose the void to evoke form and texture. They are used in Chinese landscape painting to render topographically the various rocky and earthy mounts of the painter's imagination.

As for brushstrokes suggesting the rhythmic breath, they carry the void within their very line (fig V.1.11):<sup>23</sup>

- *Kan-pi*, dry stroke, made by a barely inked brush, induces a drifting shift between absence/presence, substance/spirit
- *Fei-pai*, flying white, a quick linear sweep of the brush, creates a line as if incised by the void in its middle, transferring simultaneously force and lightness to the painting.

During the tenth century, colours in landscape paintings were also progressively replaced by monochromatic ink. Chinese critics and theorists of the time eulogized the monochromatic paintings over the colour paintings. Colours tended to distract the viewer from the true quality and experience of the art work while ink revealed the inner structure of the landscape rather than merely rendering its surface.

By the end of the tenth century, Chinese landscape paintings advocated serenity, poetic melancholy and sophistication, which generated an inclination for sobriety in colour, favouring principally the use of black ink and water. Han Chuo declared during the Song dynasty (10th to 13th century): 'The brush to generate substance and form, the ink to fix the colour and light.'<sup>24</sup> In addition to the brushstroke, artists used the ink level in different ways in order to render light, ambience, shade or distance. With this purpose, the ink variation was classified in three bipolar categories that could be observed for instance in Dong Qichang's Qingbian mountains (1617) (fig V.1.12).<sup>25</sup>

The first type applied the white/black ink contrast to define the clear from the dark in the landscape. In the Qingbian mountains, white accentuated the mountains' ridges exposed to light while the black of the trees and bushes enhanced the shadows cast by the topography's ripples and recesses (fig V.1.12).

The second type exploited the dry/wet ink variation to suggest the colour nuances and the graceful freshness of the landscape. Dry ink was used

to greatly detail the trees' foliage in the foreground of the Qingbian mountains. This triggered for example the leaves' rustling sound in the mind of the viewer. Wet ink expressed the foliage's luxurious shimmering colours (fig V.1.12).

The last type used the diluted/concentrated ink level to underline the distance and the relief of the landscape. Diluted brushstrokes suggested blurriness as illustrated by the faint level of ink far off in the mountains' top, while concentrated brushstrokes conveyed the mountains' topographic texture (fig V.1.12).

The final combination awakened the vibrant vivacity of the overall landscape composition in the eye of the viewer.

## 5.2 Mountain-water composition – Yin/Yang bipolarity

'Landscape' in Chinese is often written by the combination of two ideograms, 'mountain-water' (fig V.1.13). These actually symbolize the two poles of nature and thus can be assimilated to the complementary bipolar condition reflected by the Yin and Yang in their cosmologic philosophy. In this context, despite their evident contradiction, they are in a fluid process of mutual attraction and interaction owing to the dynamic force of the supreme void. This phenomenon is also conveyed onto the canvas. Chinese landscape paintings display this structural composition of mountain-water, where the reciprocal becoming of the mountain-water is embodied by the void depicting fog or clouds (figs V.1.14–15). Indeed, these clouds not only represent the water in a condensation phase but also wrap and neutralize the mountain. They evoke a non-measurable space, born from the spirit or dreams, inducing a deterritorialization that allows jumps of sequences and zooms in/out of the landscape.

According to eighteenth-century painter-theoreticians Wang Yu and Shen Tsung-ch'ien, this approach engendered two rules in the composition of the landscape painting (fig V.1.16):<sup>26</sup>

- *K'ai-ho*, opening/closing, vertically arranging a top/bottom, far/close contrastive organization of space
- *Ch'i-fu*, rise/fall, horizontally ordering the rhythmic progression of the landscape.

Mountain-water also finds an echo in the two poles of human sensibility, heart-spirit, as claimed by Confucius (6th century BC): 'The wise find pleasure in water; the virtuous find pleasure in hills. The wise are active; the virtuous are tranquil. The wise are joyful; the virtuous are long-lived.'<sup>27</sup> The wise is the

V.1.16

V.1.17

V.1.18

V.1.19

V.1.20

V.1.16    Ni Zan, *Cabinet of the purple mushroom* (ca. 1370).  
V.1.17    Shitao, *The waterfall of mount Lu* (17th century).

V.1.18    The raised distance.  
V.1.19    The deep distance.  
V.1.20    The flat distance.

man of spirit who enjoys the water's receptive nature whereas the virtuous is the man of heart who enjoys the liveliness found in the mountain. It is this homothetic rapport between landscape and man that enables an inversion of perspectives, the interiorization of the outer world by the painter.

Thus, painting the landscape is like painting the human being, both physically, with bones/rocks, arteries/rivers, muscles/trees, breathing/ clouds, and mentally, with his worries, desires, secrets. Chinese paintings also require both physical and mental effort from the artist. Ever since the Tang dynasty (7th to 10th century), the painter has to start and complete his work in one single fluid and rhythmic movement, without any retouching. The painting must be impulsive and instinctive, projecting figures from the real world as well as from the inner world of the artist. Yet, this must be done in accordance with the fundamental laws of the real.

To this end, before beginning the painting, an artist will observe and memorize the *Li* in all elements of the landscape and compose the painting mentally, with one third of full (earth) and two thirds of void (heaven + supreme void) according to the painting principle of the void (figs V.1.16–17).<sup>28</sup> These voids, made by the blanks or left-over spaces of the canvas, allow focus on the main theme on the one hand and let the viewer's mind wander on the other. Variation in size and shape of these voids lets new patterns appear in the painting, awakening the viewer to the vital breath and rhythm of the painted landscape. Thus, the gesture of the painter reincarnates the gesture of the Creation and the continuous line drawn by the painter becomes the hyphen between man and cosmogony.

### 5.3 Fifth dimension – Space-time continuum

So far, the void has been revealed within the brushstroke, the painted subjects and their spatial composition, yet it can also be examined on another level: all the painted elements can stand for the full which, in turn, can be defined according to the void of the surrounding canvas. This view can be epitomized by the ultimate binomial earth (full)–heaven (void). At this stage, however, man always intervenes as a third component in this association since he comprehends the earth and heaven by his heart and spirit. The resulting triad relationship of earth–heaven–man stimulates an escape from the frame of the canvas in order to transcend its space-time structure: the fifth dimension.<sup>29</sup> The soul of the painting, derived from the force of the void as vital breath and living entity, generates 'the desire of being in the painting'.<sup>30</sup>

#### 5.3.1 Perspectives and blank gaps

One of the methods to break off the pictorial frame relies on Chinese perspectives. The occidental single vanishing point or viewpoint is not a technique that can be used on long Chinese scrolls, for instance. Chinese use a combination of both cavalier and aerial perspectives instead. Generally, the painter is located on a higher ground to visualize the whole landscape, but he also travels throughout that landscape in a nomadic manner, which allows him to depict the distant elements in close-up or from different angles. The northern Song painter-theoretician Guo Xi devised the method of the *San-Yuan* or 'Three Distances' to render the landscape following the journey of the painter/spectator through the mountains:<sup>31</sup>

- *Kao-Yuan*, raised distance: it's the beginning of the journey and the painter/spectator is located at the bottom and looks up; the horizon is therefore low and composed of different layers of mountain chains (figs V.1.18, 17)
- *Shen-Yuan*, deep distance: it's the middle of the journey; the painter/spectator makes a pause during his climbing and looks back at the landscape lying behind him (figs V.1.19, 12)
- *P'ing-Yuan*, flat distance: it's the end of the journey and the spectator is located on top of the mountain looking at the panoramic view in front of him; his eyes get lost in the infinite (figs V.1.20, 16).

Again, these configurations are made possible by the voids in the paintings: they compartment, yet bind, both the pictorial space and the vision, and erase all remoteness by making the fore- and backgrounds equivalent. Moreover, this manner of looking 'further' in the painting conceals a circular movement that is appropriate to the void's three principles of reversibility/reciprocity, interiorization and mutation. The blank areas left on the canvas trigger the viewer's awakening or awareness by interrupting his contemplation of the landscape. This awakening brings back the gaze within the viewer, who puts a distance between himself and the painting. The gaze is then propelled further in the painting: the relationship of the subject-object undergoes a mutation where the subject gradually projects him/herself outwards while the outdoor grows into the inner landscape of the subject.

V.1.21

V.1.22

V.1.21 Dong Qichang, *Wanluan cottage* (1597).

V.1.22 Zhao Mengfu, *Autumn colours on the Quiao and Hua mountains* (1296).

### 5.3.2 Materiality and format of painting

Paintings are usually completed on either paper or raw silk, coated with alum blend to avoid soakings or blurring. Paper is mainly composed of vegetal fibres such as rice, mulberry, etc., that make it resistant and glossy. The fibrous texture enhances the void's presence within dry brushstrokes and enables the paper to age without much discoloration. By contrast, silk's ivory tint turns into dark shades when exposed to light, ruining thereby the painting into one confused stain. However, silk easily fixes ink or colour pigments of heavy wet brushstrokes without flaking when rolled into a scroll. Professional artists preferred silk, while literati opted for paper for their paintings.

Initially, paintings were mounted on folding screens used as a room partition or as a backdrop for various ceremonies. Screens are made of several vertical panels hinged next to each other; they give the opportunity to display large landscapes bridging all the panels. Later on, smaller supports appear such as fans, small folios – often twelve folded pages with wooden covers, a sort of early sketch book – hanging scrolls and handscrolls. Hanging scrolls are only exhibited for short periods of time on special occasions or as seasonal decoration. They are viewed in one sight when suspended on the wall.

Handscrolls consist of a series of silk or paper pieces linked together by a continuous backing to form a long horizontal roll. Popular by the tenth century, it is held at arm's length and viewed by unrolling the unseen scenes from left to right. Only parts of the whole landscape are visible at a time. Handscrolls are painted in sections and periods, interspersed with blank voids to create a more elastic and fluid combination between time sequence and spatial expansion. In this context, the landscape acquires a synecdoche aspect that allows any of its parts to stand for the whole, reflecting thereby the relation between the median and the supreme void. Thus experiencing a part of the landscape is experiencing the entirety of the landscape. This episodic aspect is appropriate to express narratives where one scene follows the other as one unrolls the painting.

Finally, the blank of the paper support represents the supreme void and the completion of the painting signifies the return to the original void. Unrolling the painting or opening the folded panels of a screen is to re-live the painted space in the current time, witnessing a past incident in the realm of an actual living space. Thus, the gaze sinks in an elastic continuum, made of sliding surfaces where distances collapse and time is hurled into anachronic sequences.

### 5.3.3 Inscriptions and seals

Inscriptions and seals are made in the empty space of a finished painting (heaven). These inscriptions, often poems or prose, highlight the evocative quality of the painting by proposing an indirect picture of the landscape imagined by the artist (fig V.1.21). They incorporate the notion of time within the painting whereby the rhythm of narration and the meaning of the poem resonate within the viewer so that the space of the landscape is extended into the current time. They also transform the painting into a palimpsest of perpetual interpretations and allude thereby to the invisible presence of man that completes the final binomial earth-heaven.

Inscriptions in paintings seem to be initiated by the Song emperor Huizong (12th century), who completed his own paintings by writing on them a poem exulting the moment and the state in which he made the painting. This practice is largely followed among literati during the Yuan dynasty as these inscriptions are an occasion to display their skills in juggling together calligraphy, poetry and painting: the *Sanjue*. By the time of the Ming (14th to 17th century) then Qing (17th to 20th century) eras, they became commonplace and were even integrated in the painting's original composition.<sup>32</sup> Written by the painter himself, inscriptions praise the content or the moment when the painting was made or pay tribute to preceding generations of master painters according to whose style the painting was made. When made by the owner, they express his admirations for or experience of the painting. In such case, those comments are mostly written 'in annex' to the side of the painting and are called a 'colophon'.

Seals are used as signatures in the oriental world. They are made of small blocks of soft stone, rarely wood, offering one flat side on which the name or epithet of the owner is carved in relief in ancient calligraphic style. This side is patted on a red fibrous and oily paste then pressed against the support media. Stamping paintings is a practice that seems to have been initiated by the Tang emperor Taizong (7th century) who placed his seals on all of his collections. This custom is quickly followed by collectors to claim ownership of their paintings.<sup>33</sup>

In parallel, northern Song painters begin to seal their works to avoid confusion and counterfeit in the art market. Plus, the red seal acts as an aesthetic counterpoint to the dry monochromatic work. The painter's epithet or his seal's shape and size also reveal his personality and penchants in political, cultural or religious choices. Hence by observing all the seals on a particular painting, it is possible to deduce the author, the owner and the collection it belonged to, a sort of a painting's biographic





genealogy. If one of those seals appears to be that of an eminent person, value is added to the painting (fig V.1.22).

## 6. Cultural exchange between China and Europe in the seventeenth and eighteenth centuries

The seventeenth century sees the rise in cultural exchange between China and European countries, especially France and England, after the Chinese market was taken over from the Portuguese who had enjoyed the monopoly since 1514. As more expeditions were sent through the now well-established sea roads, both parts of the world traded more varied goods, ranging from tea, silk and porcelain to decorative objects such as prints and drawings representing the culture of their respective countries. This fuelled a mutual interest in and imagination about the 'otherness', generating hybrid styles in art and architecture that combined the foreign with the indigenous. This phenomenon could be observed in Europe with the popular ornamental *Chinoiserie* and Chinese gardens, but also in China with European pavilions in the imperial summer estate.

Despite those intensified exchanges, there was a fundamental difference in the way the 'otherness' affected Europe and China respectively.<sup>34</sup> The advanced printing technique of the seventeenth and eighteenth centuries in Europe contributed to the wide spread of exotic images through novels and illustrations. The Far East, once a preserve exclusive to the aristocracy, was now made accessible to the middle class. Mundane objects brought from China found their way into European homes. If direct import was not affordable, many copies inspired by those exotic images were made available under the designation of *Chinoiserie*.

In China, this passion for 'otherness' was not as extensive as in Europe, whose influence was felt instead through trade and religion. First, China's territory was vast and varied, so prone to countless potential rebellions against the imperial authority. For fear of losing control over the British and French traders, notorious for their aggressive methods of doing business, the emperor forbade all circulation of foreigners outside restricted areas on the outskirts of Canton and Macau. Thus, contact between foreigners and locals was tightly monitored. Next, only the erudite literati showed interest in and curiosity about the West, defying the cultural confinement imposed by the emperor. They also had knowledge, enthusiasm and influence over the emperor and society that could be of use to the Europeans. Jesuit missionaries saw an opportunity to Christianize the rest of Chinese society by befriending them first, learning the language and

Chinese philosophies in order to directly communicate with the literati. Meanwhile, the fall of the Ming dynasty by the mid seventeenth century saw political power taken over by Mongols, to the major discontent of Chinese. The newly established Qing dynasty invited the Jesuits to occupy key scientific posts at the imperial palace. Motivated by their desire of converting the whole of China by winning the emperor's goodwill, the Jesuits accepted the proposition regardless of the disarray caused among the literati. As a result, European influence in China was predominantly perceptible at the imperial court and rarely in other social classes.

### 6.1 Western influence on Chinese landscape painting

As explained above, it was during the Qing dynasty (17th century) that western influence in China grew to its apogee, thanks to the integration of Jesuit missionaries in the imperial court. At the time, they were sent to China to preach and convert new adepts to Christianity on one hand, and on the other to bring back to Europe a testimony of their civilization. As a result, they were the main catalysts for cultural exchange between China and Europe during the seventeenth and eighteenth centuries.

On an artistic level, the Jesuits introduced two main novelties to Chinese traditional painting: linear perspective and chiaroscuro. These innovations were not unanimously accepted but they were sufficiently intriguing to be adopted by the professionals in their painting style. Matteo Ricci and Giuseppe Castiglione were the two main protagonists responsible for this artistic shift.

Ricci, also known as Li Madou by Chinese, was the co-founder of the Jesuit mission in China. He was well integrated among the literati as well as in the imperial court, thanks to his ability to debate complex issues in fluent Chinese. According to Catherine Pagani, two of his oil paintings of the Virgin Mary set off the Sino-European painting style in China.<sup>35</sup> Under western guidance, Chinese painters established a new school where techniques and practices from both cultures collided.

This phenomenon was enhanced by the arrival of the Italian missionary painter Castiglione, named Lang Shining in China, who remained at the imperial court for almost half a century. He brought 'European concepts of realism, perspective and chiaroscuro to Chinese painting to yield a cross-cultural hybrid'.<sup>36</sup> He contributed to the making of *Shixue* – the study of observation or the real/concrete learning – which was the first formal book on perspective in Chinese, published by Nian Xiyao in 1729. It was based on a European source dating back to 1698,

V.1.23

V.1.24

V.1.23    Wan Nian, *Qiao Bridge* (18th century).  
V.1.24    Xu Yang, *Spring in the Capital* (1767).

the *Perspectiva Pictorum et Architectorum* of Andrea Pozzo, which Castiglione helped in translating.<sup>37</sup>

In his book, Nian explained the techniques behind the sophisticated and realistic European perspective *xiangfa* – line-method – that supplanted the existing rudimentary Chinese viewpoints (fig V.1.23). He considered linear perspective to be better in ‘drawing the viewer even closer to the real by using straight lines as well as by depicting volume through chiaroscuro shading’.<sup>38</sup> Nevertheless, Chinese felt uncomfortable with this new method which represented an illusory version of a genuine, spiritual nature. Moreover, the constant shading of European chiaroscuro was perceived as ‘dirtying’ the painting.<sup>39</sup> Chinese painters preferred using several sources of light, despite its incoherence, to maintain the lightness of the overall composition. As for depth, it had to be rendered through the judicious composition of blank spaces and/or the juxtaposition of various brushstrokes on the picture frame, a cautious balance between depiction and omission that preserved the life-quality of the painted subject. This metaphysical issue was solved by linking linear perspective with the oriental concept of *Li*.<sup>40</sup> Indeed, instead of grasping the *Li* of every single painted object of the landscape such as trees, mountains or clouds, linear perspective allowed to grab the *Li* of the landscape as a whole.

This account of European perspective and chiaroscuro didn’t satisfy the conservative literati, who were more suspicious of these foreign methods. Their opinion was shared, for instance, by the famous Chinese painter and theorist Zou Yigui. He was impressed by the new perspective and shading technique brought by Castiglione, whom he saw while working at the imperial palace for the Qing dynasty:

Westerners are skilled in geometry. They make precise measurements of light and shade, foreground and background ... The images in the pictures are measured with a set square so that they are reduced in size according to distance. People almost want to walk into the houses and walls they have painted.<sup>41</sup>

However, he continued by declaring that western practice was ‘flat’ in its rendering as their painting was ‘completely lacking in the mastery of the brush [and] though elaborate, is after all nothing but craftsmanship, and therefore cannot be classified along with paintings of quality.’<sup>42</sup> For him, western paintings were not fluid and mutating as were Chinese works, and their fixed viewpoint made the whole landscape very rigid and inharmonious.

Hence, the absorption of occidental practices by Chinese artists was a paradoxical move as the western techniques improved but also simultaneously denied Chinese painting traditions. The final result was mitigated and confused as some Chinese painters adapted the linear perspective to their liking by losing the distinct vanishing point while natural components such as trees, bushes and hills appeared more ‘individuated’.<sup>43</sup> Such examples can be observed in Xu Yang’s *Spring in the Capital* (1767), where the rigorous straight lines of western perspective are broken to accommodate the more traditional bird’s-eye view dear to Chinese landscape painting (fig V.1.24).

Finally, the subject matter was no longer limited to landscape, past political glories, human and animal figures or deities, but also expanded to include contemporary events. For instance, they not only traced back official ceremonies but also documented ordinary scenes of peasants or fishermen in their daily routines. This last innovation provided the Qing dynasty with proper records on the history of that period, which helped future generations to better grasp their particular legacy.

## 6.2 Misconception of Chinese landscape painting

As stated previously, Europe has widely welcomed ‘otherness’. But this fascination and reception of the foreign happened because China was not perceived by the West as a threatening power. Accounts of the backward political regime and way of life comforted occidentals in their sense of superiority and their understanding of China as subordinate. Thus, China was considered a superficial, delightful extravagance that constituted an entertaining escape from the stern classical era that Europe was experiencing.

When the maritime road to Asia was well established in the seventeenth century, Chinese paintings were not originally part of the commercial trade as they were thought crude and rather rudimentary by Europeans. Alvarez Semedo wrote in 1655 of Chinese artists that:

in painting, they have more curiosities than perfection. They know not how to make use of oyles or shadowing in this art, and do therefore paint the figures of men without any grace at all; but trees, flowers, birds and such like things, they paint very much to the life.<sup>44</sup>

Chinese landscape paintings were attractive to Europeans for their description of exotic places, not for the technical skills, philosophy or personal intentions expressed by their authors. They also appeared to be similar to each others, owing to the use of monochromatic tones and

V.1.25

V.1.26

V.1.25 Alexander Cozens, *Imaginary landscape of tree with distant mountains* (1785–86).

V.1.26 Attributed to Castiglione, *Shooting wild geese*(ca. 1750).

the tradition of copying former masters' styles. Westerners often came to believe that later period Chinese paintings were mere copies of earlier ones. However, Chinese understanding of copying an earlier work was not restricted to faithfully reproducing the ancient painting in a technical way. On the contrary, copying implied a certain level of interpretation of the former technique and an assimilation of the master's intention. The end result combined those understandings into an original painting that sometimes presented scarce similarities with the previous one.

Europeans also found Chinese perspectives to be confusing or poor compared to the linear perspective they had enjoyed in their paintings since the fifteenth century. As stated earlier, Chinese paintings tended to plunge the viewer within 'the picture frame into a space coextensive with the viewer's'<sup>45</sup> by means of blank gaps left on the canvas. Their elusive aspect created patterns that enabled the viewer to travel inside the painting. This method well suited the Chinese painting formats, such as scrolls or screens, where the whole landscape was difficult to seize from one single vantage point. Albeit that the subject matter was carefully choreographed by the painter, those voids allowed time progression and spatial sequence to be engaged in a dynamic and elastic way that could not be attained in the western single-viewpoint technique. Therefore, perspective as known in the western tradition was supplanted here by a multiplication of different viewpoints and jolting or jumping from one point of view to another according to what was best suited to the painting's narrative.

In this context, Chinese paintings didn't influence fundamentally the painting techniques in Europe. They merely affected the choice of subject matter and inspired the mock-up of oriental motifs in the background of western paintings. Nevertheless, some exceptions occurred, such as in the case of Alexander Cozens, a Russian-born painter working in England. He declared in 'A New Method of Assisting the Invention in Drawing Original Compositions of Landscape' (1785–86):

The powers of art and invention, impart picturesque beauty, and strength of character to the works of an artist in landscape painting ... Composing landscapes by invention, is not the art of imitating individual nature; it is more; it is forming artificial representations of landscape on the general principles of nature, founded in unity of character, which is true simplicity.<sup>46</sup>

This quote resonated with Chinese traditional landscape paintings which sought to capture the quintessence of nature through the *Li* concept and

keep the natural spirit, or vital breath, of the landscape alive in the overall pictorial composition. Refuting dull replication of nature, Cozens devised a painting technique called the 'blot' which consisted in dropping monochromatic ink at random on a crumpled sheet of paper and interpreting those blots into a landscape (fig V.1.25). This method aimed at liberating the artist from the constraints of topographical paintings, such as perspective, proportion and accuracy. Instead, it focused on stimulating creativity by generating an imaginary landscape composed as a whole, in a rapid and instinctive manner, working 'with the swiftest hand to make all possible variety of strokes upon the paper, confining the disposition of the whole to the general subject in the mind'.<sup>47</sup>

In consequence, the painted landscape was far from the dry conventional outlines of forms and stepped into an imaginary world infused with poetry and spontaneity, close to that of Chinese traditional landscape paintings. This method recalled the practice of some Chinese literati painters, such as the 'splashed-ink'<sup>48</sup> method of Wang Mo (ca. 805) or Zhang Zao (end of 8th century). They painted by splashing and spilling ink directly on silk and composing intuitively an imaginary landscape from these stains, in one gesture.

Again, this approach was deliberately anti-conformist, conceived as a criticism of the established painting method of the time. Whether Cozens was aware of those Chinese master painters is difficult to establish, since he claimed this idea came from Leonardo da Vinci's *Treatise on Painting* (published in English in 1721).<sup>49</sup> However, he probably had access to Chinese traditional landscape paintings belonging to his clients' collections, in particular those of King George III.<sup>50</sup>

In contrast, painting technique of occidentals living in China was more susceptible to changes. For instance, in *Shooting Wild Geese* (ca. 1750), Castiglione depicted the emperor in a rocky and watery landscape, using the Chinese flat distance method (fig V.1.26). Despite the recognizable Chinese structure and texture of the landscape, the presence of shadows and light and use of colours denote the western character of the painting. Today, fascination for Chinese traditional landscape painting no longer stems from the exoticism that it depicts but from the whole experience that it offers. Just like the early Chinese, Westerners enjoy the aesthetic of those landscapes in a more spontaneous and spiritual manner – spiritual not in a religious but in a reflective sense – regardless of their knowledge of its history, techniques or philosophies.



## 7. Conclusion

The oriental void is a fundamental concept that infiltrates Chinese daily life as well as Chinese arts and crafts. It is perceived as a positive philosophy that provides the path to one's plenitude. Its three key principles of reversibility/reciprocity, interiorization and mutation succeed one another in a restless, dynamic sequence, making the oriental void an active continuum where all beings unravel, mingle and rejoin endlessly into a new combination: the hyphenation of the void.

The void's complex nature is best understood through Chinese traditional landscape painting. Indeed, its impact is not merely reduced to the visual blanks left on the canvas but lies deeper in the regulation of the painting's subject composition, format and brushstrokes. The void also allows the bridging of the physical gap between the painting and the viewer by devising a manner of looking 'further', through which the viewer's world collides with the realm of the painting. The practice of writing poems and stamping seals finally completes the painting by enhancing its evocative experience. All of these components enable the viewer to grow beyond the picture frame into the supreme void. The void is therefore the hyphen that brings into unison the artist, the viewer, the painting and the Cosmos.

The seventeenth-century cultural exchange between China and the West resulted in broadening the knowledge and gratifying the insatiable curiosity about the 'other' in the respective countries. Driven by its sense of political superiority, Europe never seriously considered China and its products to be more than a mere leisure pursuit. In fact, the West was more interested in the 'foreign' China than in China itself, an uncanny reality observed in the *Chinoiserie* inspired more by European fantasies than by accurate descriptions of the country. On the other hand, the strategic presence of Europeans in imperial teaching positions affected oriental culture in a deeper manner with, for example, the writing of the first Chinese treaty on perspective based on Italian art and architectural theory.

Bearing all these observations in mind, this thesis will investigate how the oriental void essential to Chinese culture can genuinely affect occidental architecture. In order to do so, the next chapter intends to explore the concept of space in oriental culture, which inevitably also involves the concept of time as both notions are intimately linked by the principle of reversibility/reciprocity of the oriental void.





## 2

## The Oriental Architecture of the Void

This chapter begins with the assimilation and representation of the Taoist void in oriental architecture. It then continues with the etymology behind the oriental words 'space' and 'time' as this introduces temporal qualities to space and spatial qualities to time through the word 'void'. These studies will outline distinctive spatial features that can be interpreted as conceptual devices for architectural design in the West.

It is to be noticed that this section is mostly based on Japanese architecture as its roots lay in Chinese Taoist architecture. In fact, Ching-Yu Chang goes further in his essay 'Japanese Spatial Conception' by writing that Zen philosophy can be seen as the practical extension of Taoism, and refers to a quote by Okakura Kakuzo: 'Taoism furnished the basis for esthetic ideals, Zenism made them practical.'<sup>1</sup> As a result, Japanese architecture could be conceived as a tangible embodiment of Taoist metaphysical concepts.

### 1. Architecture according to Taoism

Lao-Tzu is considered as the founder of Taoism, a theological philosophy born and developed in China during a period of political instability and social insecurity. He brought refreshing changes to the Confucian perspective of the individual in vogue at the time. In fact, Confucianism always considered the human being in relation to society; he or she played an essential role in the well-being of society by abiding dutifully by its rules and orders. By contrast, Taoism emphasized the individual as a being connected to nature in the universal flow of the Tao. It insisted on the 'natural' and the merit of each individual, with its principles based on the oriental void. Confucianism and Taoism didn't compete to win authority one over the other but rather they completed each other in a peaceful way.

Regarding Chinese traditional architecture, the same co-habitation could be observed in the rigid Confucian layout of the house contrasting with the Taoist unruliness of its garden. On closer examination, this simplistic vision is replaced by a complex set of architectural concepts based on fundamental Taoist principles. Although they are closely intertwined through mutual references, attempts are made to draw the underlying architectural themes in the course of this chapter.

V.2.1

V.2.2

V.2.3–4

V.2.5

V.2.6

- V.2.1 The symbiosis with nature of a *pyol-dang*, an annex to the men's quarter of a Korean traditional house.
- V.2.2 The natural materials used in man-made construction blending with its surrounding nature.
- V.2.3–4 Porosity of the rice paper doors and windows in Nakseonjae Estate, *Changdeokgung Palace* (15th century), Seoul.
- V.2.5 Veranda in-between the garden and the Old *Shoin* or drawing room, *Katsura Imperial Villa* (17th century), Kyoto.
- V.2.6 New Summer Palace pavilion gallery (renovated at the beginning of the 20th century), Beijing.

## 1.1 Nature: horizontality and permeability

The main influence of Taoism on oriental architecture relies on its strong association with nature. This ecological inclination was not instructed by written decrees yet became a tacit and intuitive practice in the making and designing of a building. In China, architecture, unlike painting or calligraphy, was not considered as an art but rather as craftsmanship.<sup>2</sup> Architectural debate and philosophy didn't exist and were replaced instead by construction manuals that depicted timber structures and engineering, such as the *Kao Gong Ji*, *the examination of craftsmanship*, written around the fourth or third century BC during the Western Zhou dynasty. Additionally, civil wars, chaos and Communism's position towards religions, along with the Cultural Revolution of 1966–76, overthrew what was left of the Taoist legacy. Its architectonic syntax could mostly be observed through edifices that endured the test of time.

In eastern countries, nature is not perceived as a wild territory to be tamed but as an environment that one aspires to live in symbiosis with (figs V.2.1–2). Its equilibrium is absolute and consequently cannot be disturbed by bold and disrespectful structures. Architecture can fulfil those criteria by assuming spatial horizontality and permeability of its construction. The Korean artist Do-Ho Suh declared: 'There are no walls in the building in which I grew up in Korea. It is all doors and windows. The apertures are covered with translucent rice paper that transmits light.'<sup>3</sup> Indeed, the traditional house stands at the opposite extreme from a tall, sturdy building that cultivates the privacy of its inhabitants and isolates them from the surroundings. It is considered a momentary refuge from the weather and blends subtly with the natural landscape. Scents, sounds and light from the garden delicately penetrate the house, which is enclosed not with solid walls but with porous doors and windows (figs V.2.3–4).

There is also an external corridor running around the rooms, sheltered under the roof eaves (figs V.2.5–6). This oriental veranda can be perceived in two distinct manners: either as an outdoor extension of the internal rooms, or as the prolongation of nature into the interior space of the house.<sup>4</sup> Fluid, this space embodies both the inside and the outside where the inhabitant's gaze unfolds in an elastic and dynamic continuum. Sitting on this observation platform, one experiences the shifting days and seasons, or the transitoriness of all things. Drifting incessantly between inner and outer worlds, one drowns softly into the greatness of the scenery.

## 1.2 Void: impermanence or transience

As previously explained, Taoism considers the void as the fundamental origin of all being: immanent and impalpable, it allows both the containing and the defining of all things, gaining thereby a status in its own right. Lao-Tzu grants the void a positive connotation by claiming:

Thirty spokes share the wheel's hub; it is the centre hole that makes it useful. Shape clay into a vessel; it is the space within that makes it useful. Cut doors and windows for a room; it is the holes that make it useful. Therefore profit comes from what is there: Usefulness from what is not there.<sup>5</sup>

In fact, the void here is considered as non-active: amorphous, tranquil and receptive. However, it is those same qualities that allow the full to move and come alive. Beyond the foreseeable dichotomy, the void and the full sustain a dialectical relationship whereby they penetrate and incessantly transmute each other according to different stages in time, creating thereby a fluid continuum.

Amos Ih Tiao Chang interpreted Lao-Tzu's concept of the void in relation to architecture in his book *The Tao of Architecture* in 1956:

architectural composition is based on the time factor for both physical and psychological experience. With Time as the main factor of organization, architecture could be defined as 'spatial expression of human life and experience in time'.<sup>6</sup>

This phenomenon reveals the appearance of a cycle in architecture which underlines the importance of the temporality of all phases and spaces. This principle is strengthened by another dictate of Taoism: impermanence. It epitomizes the transient nature of life by declaring that all things undergo continuous metamorphosis. As a result, architecture and time have an echoing relationship, whereby time provides the context in which architecture exists while architecture 'endows time with spatial intelligibility'.<sup>7</sup> A single space can adjust and host circadian activities, enabling it to mutate and witness the passing trails of the day: 'The space is used only in association with a defined purpose and for a certain period of time.'<sup>8</sup> It is these dynamic and temporal aspects that characterize the oriental space.

V.2.7

V.2.8

V.2.9

V.2.10

- V.2.7 Interior of Do-Ho Suh's parents' home in Seoul.
- V.2.8 Progressive sequence in the interior of the main building, the meditation hall or *hojo* in *Ryoan-ji Temple*, (15th century), Kyoto.
- V.2.9 Asymmetric composition in a *Hanoak*'s elevation.
- V.2.10 Asymmetric wall composition of the *Shokintei* tea room, *Katsura Imperial Villa* (17th century), Kyoto.

### 1.3 Passage: progressive sequence and interdependence

Taoism also emphasizes the journey rather than the final state because it offers time and opportunity to observe, absorb and merge with the environment. By doing so, one's inner void vibrates in unison with the surroundings to attain the greatest of all vacuity, the plenitude. This initiatory journey is often symbolized by the poetic of a floating cloud representing the distant as well as the unfathomable and evading time. Thus, the dynamic of the oriental spatial concept is based on slow, horizontal, progressive, sequential experience wandering from 'the part to the elusive whole'<sup>9</sup> (figs V.2.7–8).

Architecture embodies this passage by choreographed compositions satisfying a principle which ensures that each component does not exist independently, but only in relation to its opposite, to the image of the Taoist bipolar Yin and Yang. The passage from one room to another is therefore more elaborate than the location of the room within the edifice. As a result, there is no visual immediacy of a building but a physical and psychological unveiling as one glides patiently from space to space to experience the building in its infinite wholeness. Again, this phenomenon is also corroborated by the Taoist principle of impermanence which refutes an absolute reason for the existence of all things and gratifies an immediate causal response instead.

### 1.4 Bipolarity: complementarity and flexibility

As a continuation of the two previous notions of impermanence and passage, duality is an essential premise of Taoism which profoundly affects eastern thought and life. Lao-Tzu explained: 'The way to acquire the positive is to contain the negative. Become positive by controlling the negative.'<sup>10</sup> This statement does not imply the wrestling of irreconcilable forces but cooperation between comparable, yet opposite, extremes (positive/negative). A pole cannot exist without its complementary and the two are balanced by a dynamic oscillation defining the Tao. As a result, each architectonic element is carefully weighed up by its contrary to obtain harmony within an edifice. This notion is not to be confused with the idea of symmetry, since if two architectural components were perfectly equivalent, there would be no oscillation or movement, ruining thereby the Tao of the place. This principle leads therefore to architectural flexibility in the use of spaces. For instance, the rooms of a traditional Japanese house can remain indecisive and empty thanks to

the *kura* room, a separated storehouse located at the end of the house compound, where all essential furniture and paraphernalia can be stored, out of sight yet easily accessible. In this manner, the empty rooms of the house are counterbalanced by the filled rooms of the storehouse.

### 1.5 Incompleteness: asymmetry and imagination

The notion of incompleteness constitutes one of the many paths that lead to the plenitude, the ultimate void of voids, the state of harmony and tranquillity. This premise seeks to leave an interstice for the user's imagination to complete the construction, generating thereby an ongoing dialogue. This shows that the oriental space is understood and appropriated both physically and psychologically. For instance, in China, columns, apertures and other architectural components are designed in odd numbers, preferably nine as it symbolizes heaven.<sup>11</sup> Even numbers are avoided since they embody stagnancy, motionlessness or even death, as in four, which lead to the absence of life, the Tao, in the building. The same reason lies behind Korean traditional houses where 'Koreans ... even incorporated a certain amount of imperfections or asymmetry in the creative process in order to retain the type of spontaneity found in nature' (figs V.2.9–10).<sup>12</sup> The choice of asymmetry in Japanese traditional architecture is also motivated by the same incentive, as described by Arthur Drexler:

It was important to produce a space that would reflect the transience of things in this world, the world of forms, and to this end asymmetrical compositions were preferred: only what is incomplete is still within the process of life (the Way/the Path) and is therefore imperfect (asymmetrical).<sup>13</sup>

## 2. Etymologic influence on the oriental concept of space and time

In the occident, the word 'space' is ordinarily used to designate the confined room between walls or the cosmic world beyond the earth. It is commonly understood in relation to geographic, topographic and philosophic concepts of place, territory, boundary, etc. Meanwhile, the word 'time' conveys the idea of duration or flow of events that one experiences, thus is generally associated with history, movement and life. As a result, space and time are usually perceived as two separate notions that can be coupled according to circumstances.

V.2.11

V.2.11    *Ise Shrine*, old shrine on the left, new shrine on the right, south-west Hongshu.

In his introduction to *Boundaries in China* (1994), John Hay writes that 'the temporal space of the chronologies and the topographical time of the geographies are very mobile, expanding and contracting according to local conditions'.<sup>14</sup> In China, Japan or Korea, space and time coalesce into a fluid continuum. This understanding is easier to grasp when one observes an etymologic particularity which enables Orientals to appreciate space, time and void as indivisible, as naturally being part of each other. In those countries, the words 'space' and 'time' share the same character or syllable, 間 or 간, *Jian*, *Kan* or *Gan*, meaning the in-between void, which semantically connects those concepts together.

Initially, 空間, *Kong-jian*, is translated from Chinese as 'space' in English. It is composed of two ideograms, where 空, *Kong*, stands for emptiness, void, sky or air, and 間, *Jian*, for interval, in-between void or void-gap. If taken one step further, the ideogram 空, *Kong*, can be decomposed into 穴, *Xuè*, meaning earth, cave or hole, written on top of 工, *Gong*, translated as working or building. Therefore, space in Chinese 空間, *Kong-jian* can be interpreted as the void-gap that builds up from earth to heaven, giving thereby a mental visualization of space. As a result, 'space' can be perceived in relation to 'void', while the 'air' of the 空, *Kong*, seems to provide some palpable materiality to the void, and thereby to space. From this Chinese word 空間, *Kong-jian*, stem also the Japanese Kanji 空間, *Ku-kan*,<sup>15</sup> and the Korean 공간, *Gong-gan*, that both present the same semantic structure.

On the other hand, the Chinese word 時間, *Shi-jian*, is translated as 'time' in English and combines the previous character 間, *Jian*, the interval, with 時, *Shi*, the passing time or the hour. Indeed, 時, *Shi*, can itself be decomposed into 日, *Ri*, the sun or the day, written next to 寸, *Cùn*, a traditional measuring unit about three centimetres long. Thus time in Chinese 時間, *Shi-jian*, is the void-gap that stretches from one sun to the next, giving again a visual image for time.

Finally, 間, *Jian*, the void-gap or the in-between void, combines the previous ideogram 日, *Ri*, the sun or the day, with 門, *Mén*, meaning gate, door or entrance, which is 'pictorially' represented by two 'leaves' of a double door. In 間, *Jian*, the *Ri*-sun's position in the *Mén*-gate's doorway conveys the idea of standing in the threshold between two spaces or being in-between the end of one day and the beginning of the next. Therefore, this concept of 間, *Jian*, in conjunction with the Chinese semantic structure, shows not only that the notions of space, time and void interrelate but also that the spatial quality in time, or the

temporal aspect in space, is always introduced by the intermediary of this void-gap. By extension, in Korea and Japan, the 間, *Kan*, comes to designate the distance between two columns as well as an area located between two columns. Thus, its significance grows wider to embrace the intercalary-void, which simultaneously separates and joins, that is used as a measuring unit in architecture. One *kan* roughly corresponds to 6 feet in secular architecture, 7 feet for sacred architecture, but all these measures vary also according to different cities.<sup>16</sup>

It is to be noticed that in Japanese this character 間 can also be read as *Ma*, or *Mu*, which sounds more familiar to occidentals thanks to Arata Isozaki's exhibition of 1978 entitled '*Ma*: Space-Time in Japan',<sup>17</sup> during which he presented to the West the oriental idea that 'space was perceived as identical with the events or phenomena occurring in it; that is, space was recognized only in its relation to time flow'.<sup>18</sup> This inseparable nature of the oriental space and time is a mandatory condition for the in-between to serve as an architectural model. It allows the user to wander physically and mentally around the surroundings.

### 3. Architecture according to the oriental concept of space-time

#### 3.1 Cyclic time and boundless space

Generally, a linear and oriented concept of time is attributed to the occidental world whereas the oriental perception seems more elastic, interweaving past, present and future in an endless continuum. Moreover, time and space are inseparable, as previously explained. In Buddhist philosophy, the universe is correlated to time according to four different phases: completion-inhabitation-destruction-void.<sup>19</sup> The void constitutes the phase which enables the initial cycle to change or mutate into another. As an illustration, the Ise Shrine located in South West Honshu is the oldest and most sacred Shinto temple in Japan (fig V.2.11). Every twenty years, the temple and its surroundings are rebuilt on an adjacent site. Once the relics are transferred from the old to the new temple, the former building and fence are disassembled. As each sequence succeeds to the next one in an endless loop, it reflects the movement of an eternal return to its origin.<sup>20</sup> This involves the obsolescence of terms such as 'beginning' or 'ending' while it also demonstrates the fleeting nature of all things; what remains is a 'timeless universe without spatial boundaries'.<sup>21</sup>

V.2.12

V.2.12    Boundless spatial perception in the Old *Shoin* or drawing room of the *Kastura Imperial Villa* (17th century), Kyoto.



Transposed to architecture, this absence of boundaries is of not a physical but a visual order, as explained by Chang in *The Tao of Architecture* (1956): 'What really counts is the indefiniteness of the physical confinement, not necessarily its physical elasticity.'<sup>22</sup> This effect is achieved by harmoniously balancing opposite poles such as light/shadow, aperture/enclosure and contraction/expansion to create an illusion of spaciousness, regardless of the size of a room. In this context, a window onto a panoramic view has the same weight as a door hinting at the presence of an adjacent space, as both give a sense of expansion into boundlessness. While the window offers a visual immediacy of limitlessness, the door indirectly suggests an infinite succession of contiguous spaces (figs V.2.7–8, 12): 'As a result of fragmentary integration of each environment, physical limitation partially becomes non-existent and directed space between environments is created.'<sup>23</sup>

### 3.2 The present, the practice of indifference and the multiplicity

In *L'esthétique du temps au Japon* (2001), Christine Buci-Glucksmann declares that time can only exist in the 'present', the in-between of the current in the oriental context of a borderless space-time continuum.<sup>24</sup> The present is sensed through a series of moments, where each moment is made of countless graspable, yet non-empty, instants. As such, time can be perceived as virtuality, or a potential energy that can be actualized by a being. In these circumstances, time becomes the very essence of that being, accessible by the Tao: the 'being-time'. Hence, time is not an intangible notion because it is immanent to all things. It offers life; it regenerates inexorably, birth after rebirth ... The subsequent 'becoming' defines the life of a 'being-time' and it is manifested through the appearance or the 'manner' of a being-time. Buci-Glucksmann corroborates these notions by a quote from Victor Goldschmidt: 'Time doesn't exist (ontologically), but subsists (since related to being) and is given through "manner of being" and "movement of incorporation".'<sup>25</sup> This approach is summarized by Chang, when he declares that all being-times are born from the Tao, the ultimate void, and are thereby made equivalent, yet the actualization through the act of becoming in the present makes those being-times all individual.<sup>26</sup>

Transferring those elusive values into concrete architectural precepts may prove to be challenging. In this perspective, it is necessary to understand how the present, therefore the fleeting becoming of a being-time, can be grasped. According to Buci-Glucksmann, the present is only accessible

by 'the practice of indifference and withdrawal',<sup>27</sup> which earnestly recognizes the equivalence of birth and death in time and the ethical consequences that time must be faced with. This acknowledgement lets all things blur into evenness where one evaporates into the flow of time: the mental vacuity. It is then that the surrounding of the present moment emerges from the general cloudiness and triggers the awakening of the drifting mind. This consciousness provides the ability to adjust and merge with the rhythm of the present environment; one finally joins the oneness of the Tao: the plenitude.

In architecture, the state of indifference can be created by the detachment necessary for a foreground to acquire aspects similar to the background, supplying an indistinct setting for the user. It facilitates not only compartmenting the vision through spacing, but also isolating singular details.

This can be achieved by a profusion or reiteration of diversity and interstices: the principle of multiplicity. The proliferation plunges the viewer's surroundings in haziness, veils their outline and impedes their wholeness to be grasped. For instance, the interior of a temple can be submerged in heavily ornamented paintings and carvings making the readability of the space difficult. It also confuses its original significance by engendering countless potential interpretations. The concept of multiplicity originates from the Taoist principle of the void where its immanence is enlightened through the sacred figures of one, two, three and the thousand, where the thousand symbolizes the infinite. Furthermore, it also corroborates the Taoist notion of bipolarity as this overwhelmingness counterbalances the minimalism of the void precept. The oriental space is thus appropriated bodily but above all through an interiorization process involving the viewer's memory, emotions and imagination.<sup>28</sup>

### 3.3 Occidental variation of the oriental *Jian*

It is possible to find similar concepts in the occidental world, where the interval or the void-gap can be approached from another point of view. In fact, a parallel can be drawn with the word *milieu* in French that refers, respectively or simultaneously, to time, measure and space. In terms of time, *milieu* expresses the intermediary period between separate events and, as a measure, *milieu* means the average of all things. Originally, the word dates back to the thirteenth century and derives from the Latin *mi* – centre, and *locus* – place. It designated the opposition to front and back and to both extremities. Later in the seventeenth century, it



acquired a spatial connotation as 'surrounding environment' that was used in scientific fields to replace the Latin term *medium*. In his essays 'Les Pensées' (published in 1670), Blaise Pascal demonstrated the existence of God by using a symmetrical construction of two infinities, the infinitely big and the infinitely small, where man was positioned in the mystifying '*milieu* between nothing and everything'.<sup>29</sup> This *milieu* describes the place located at equidistance from the extremities but it can also designate what encompasses all things left in its centre. By extrapolation, *milieu* can then be observed as a fixed point as well as a boundless space where centres are everywhere and nowhere since there are as many centres as there are positions. Furthermore, *milieu* defined as medium gives it palpability as observed in the oriental void. For these reasons, the *milieu* can be interpreted as an interval or intercalary space.

#### 4. Conclusion

The greatest Taoist influence resides in the integration of a building into its surrounding environment; it encourages a peaceful approach where nature and artifice co-exist in harmony. The transience endorsed by the oriental void is expressed through the course of time embodied in architectural space. It emphasizes the act of passage that needs to be carefully orchestrated in various interdependent sequences. The Taoist bipolarity is also incorporated by the juxtaposition of complementary features that generates a dynamic balance shaping the spatial flexibility. The plenitude is then reached when the inhabitant and the building merge together in the flow of the Tao. This is made possible by using asymmetry and incompleteness in architectural composition as they leave gaps for the viewer to fill with his imagination.

This ecological approach to oriental architecture is not anthropocentric, as it sees man as part of the large ecosystem provided by nature. This exposes in fact the close analogy between nature and the hyphenation of the oriental void. Beside its cyclical change of seasons or its birth-death sequential repetition, nature foremost presents a system where all components are integrated and interconnected into one continuous whole. Vegetal and animal organisms relentlessly interact in unison with one another, the climate and the mineral soil, to generate mutations that form natural evolution. It is in this contextual framework that architecture receives its place in nature.

The etymologic analysis reveals the hyphen role played by the void between the eastern concepts of space and time. Transposed to

architecture, this void generates a boundless, timeless space-time continuum by introducing the principle of multiplicity and repetition. This profusion triggers a mental vacuity in the mind of the user who then perceives the ensuing architecture as a transitory interval between the invisible and the visible, the tangible and the intangible, reminiscent of 'the configuration of a cloud: a very sudden gradient in density rather than a physical enclosure, a dynamic interface rather than a marker or radical difference'.<sup>30</sup> In this blurred context, the user awakens to his surroundings in the present moment by the practice of the wu-wei or principle of non-action or indifference. He subsequently adjusts his behaviour to the current situation, manifesting thereby his manner of being in the world. In consequence, the hyphenation of the void transpires in the fleeting configuration of a cloud that is revealed in the present moment through the evolving manner of being of the ten thousand beings of the universe.

The oriental void finds homologous ideas in the West through the concept of *milieu*. The latter is however overlooked in western architecture as it is generally considered in the sense of context, rather than of a topographical/chronological in-between as revealed by the reading of the oriental void. In order to develop further east-west connections, the next chapter will browse the occidental void. The intention is not to give a whole historic or wide range of philosophies but to contemplate a western theory presenting similarities with its oriental equivalents.



## 3 The Occidental Void

This chapter begins with a brief description of the western perception of the void in science and philosophy before focusing on Heidegger as an example of concern for the void in western philosophy. Heidegger was specifically chosen among other peers such as Gottfried Leibniz or Arthur Schopenhauer for his direct encounter with the teaching of Taoism when he partially translated the Tao Te Ching in 1946.<sup>1</sup> Although this translation was not completed, it appeared to have had a great impact on Heidegger's work.<sup>2</sup> In his 'West-East Dialogue: Heidegger and Lao-tzu' (1990), Otto Pöggeler briefly compared the pantheist doctrine of Meister Eckhart with Heidegger's philosophy.<sup>3</sup> Eckhart explained that a righteous man needed to be detached from his will and all earthly things in order to be one with God. By contrast, Heidegger separated this detachment from religious ambition as man was a finite being unlike the infinitude of God. In this respect, he redefined Eckhart's detachment as man's awakening to his own being triggered by the mundane things around him. For Pöggeler, it is the 'Far Eastern meditation that encouraged Heidegger to take this different path to the determination of detachment starting from the "thing"'.<sup>4</sup> It is in this contextual framework that Heidegger's essay 'The Thing' (1950) will be analysed in relation to the oriental void, then correlated to another of his essays, 'Building Dwelling Thinking' (1951), in which architecture was perceived as 'built thing'. This eastern influence on western architectural thinking will be followed by a discussion on the effect of the oriental void on occidental modernist architecture.

### 1. The void in occidental culture

Up to the seventeenth century, the scientific void in occidental history is mainly divided into two 'schools' that rival each other. The dominating branch follows Aristotle's belief that void, as space empty of substance, doesn't exist simply because of the principle of continuity: the universe is continuously filled with objects and space is the delimitation of these objects.<sup>5</sup> Thus, void seems to be an absurdity by its own definition. Another approach relies on Aristotle's theory of motion which claims that an object only moves thanks to the existence of a medium with a speed inversely proportional to the medium's density. Hence in the void, i.e. where there is no density, an object would move with an infinite speed which implies that this object would immediately fill any void at the very instant it is created, contradicting again the existence of the void. However, by the Middle Ages Aristotle's denial of the void had raised uneasiness among the Christians who saw it as a threat to

V.3.1

void

mercury

V.3.1 Evangelista Torricelli, vacuum experiment with mercury (1643).

God's omnipotence. Hence, this issue was evaded by stating that the void was theologically sustainable but not validated in Nature. In fact, Nature 'abhorred' void and always steered clear of it, as declared by Johannis Hennon: 'It is not possible for the void to exist naturally, and that is evident, for nature abhors a vacuum.'<sup>6</sup>

In parallel, atomists such as Democritus and Leucippus develop the idea during the fifth century BC that the void's existence is an essential condition for their perception of the visible world. Without the infinite void, the small indivisible particles, called atoms, are not able to move around and agglomerate into clusters, kosmoi, which constitute all visible objects. This atomic reconfiguration made by the formation and dissolution of these transient clusters is at the origin of all changes in the visible world. The void is not the concept of an absolute space but of a transitory space in-between atoms and is therefore irrefutably bound to matter, the atoms, by becoming its obligatory complement.

These theories are brought to an end by the mid seventeenth century when the void's existence is irrefutably proven by scientific experiments carried out on atmospheric pressure by the likes of Torricelli, Pascal, von Guericke and Newton. The invention of the mercury barometer by Torricelli in 1643 was particularly successful (fig V.3.1): his test consisted in a glass tube filled with mercury which was then placed upside down in a basin full of mercury. Two main observations were made: first, the mercury in the tube slowly poured down into the mercury of the basin, leaving a vacuum in the upper part of the tube. Second, the flow of mercury from the tube to the basin ceased after the mercury column reached a certain level. The first result demonstrated not only that vacuum existed in nature but also that it didn't have the devastating force of attraction, the 'horror vacui', denounced by Aristotle. Indeed, this force would have prevented the top of the tube from being empty. The second result indirectly confirmed Torricelli's hypothesis that air was not weightless and this weight put a pressure on the liquid in the basin, keeping the mercury column from being fully emptied into the basin: the atmospheric pressure. From then on, various tests were conducted to better understand the void's properties and modalities, fomenting endless debates in scientific, religious and philosophical fields.

In occidental philosophy, the void is debated as an ontological question where it embodies the absence of a presence as well as the spiritual and psychological abyss where one dives in a state of distress. This dates back to the Dark Ages, when the void acquired a negative connotation as an

outcome of the fear of the unknown, often associated with the mystical dark or evil.<sup>7</sup> Therefore, religion exploited the void in an apophatic way, declaring that God was the only one who could fill the void and draw substance from the dark by the light of creation, from non-being to being. This perception of the void was revised during the nineteenth century and unveiled the concept of nothingness, nihilism. Nihilists such as Nietzsche stated that existence didn't aim for higher purposes, nor did it have a meaning or a divine origin, the existential nihilism. Truth could not be achieved since all things could be interpreted in many different ways.

## 2. Architecture of the full

Up to the beginning of the twentieth century, the void in occidental architecture is mostly perceived as the negative or residual space contained within the physical delimitation of the walls, ceilings, etc. Thus, architecture indirectly designs the void by moulding its solid outer envelope, which can be objectively measured and scaled in all directions – length, height and depth. The void's materiality is amalgamated with air and tends to be relegated to secondary concerns as building technicalities or HVAC, that only come after the fulfilment of architectural form and functions. In fact, scientific discovery of the void's properties has few, if not the least, repercussions on architecture, the opposite to the impact made by the constant evolution of innovative materials.<sup>8</sup> In consequence, occidental architecture appears foremost as a solid shelter protecting man from a hostile environment. Furthermore, feelings of insecurity or uneasiness are stirred up by empty spaces or spaces stripped bare of all signs of personalization and specificity. The space is then invariably qualified as clinical, aseptic or static. The void remains an abstract notion difficult to apprehend owing to its invisibility and impalpability. In order to install a void theory which resonates with western architectural culture as well as the oriental understanding of the void, this thesis analyses Heidegger's essays on 'The Thing' and 'Building Dwelling Thinking'. His readings through the light of the oriental void could be reinterpreted as essays that reconcile occidental architecture with the intangible void.

## 3. Reading Heidegger

Many comparative studies have already been undertaken on Heidegger and eastern philosophies by academics of both the eastern and the western world, as witnessed in *Heidegger and Asian Thought* (1990)





edited by Graham Parkes or *Heidegger's Hidden Sources* (1996) written by Reinhard May. Works such as *The Tao of the West* (2000) by J. J. Clarke explicitly draw an inventory of uncanny affinities existing between Heidegger and Taoism. In the context of my research, I will examine how Heidegger's understanding of building as 'built thing' in his essay 'Building Dwelling Thinking' can be assimilated to the oriental void.

### 3.1 'The Thing'

'The Thing' discusses in a philosophical manner the mundane objects that surround our daily life. To this purpose, Heidegger uses the jug as an example to state the difference between an object and a thing.

#### 3.1.1 The Jug and the void

Heidegger is not unfamiliar with concepts of the Tao as he participated in the translation of the *Tao Te Ching* in the summer of 1946, assisted by a Chinese scholar, Paul Shih-Yi Hsiao. This is attested by the metaphor of the jug he chose when writing about the void in 'The Thing' in 1950:

When we fill the jug, the pouring that fills it flows into the empty jug. The emptiness, the void, is what does the vessel's holding. The empty space, this nothing of the jug, is what the jug is as the holding vessel ... From start to finish the potter takes hold of the impalpable void and brings it forth as the container in the shape of a containing vessel ... The vessel's thingness does not lie at all in the material of which it consists, but in the void that holds.<sup>9</sup>

This passage clearly evokes Lao-Tzu's *Tao Te Ching*, chapter 11:

Knead clay in order to make a vessel.  
Adapt the nothing therein to the purpose in hand, and you will have the use of the vessel. /.../  
Thus what we gain is something, yet it is by virtue of Nothing that this can be put to use.<sup>10</sup>

Like Lao-Tzu, Heidegger declares that the jug/vessel is defined not by its substance, shape, colour or other material properties but by the void that it holds. This void is what makes the usefulness of the jug/vessel – the gathering and the pouring – regardless of its form and material.<sup>11</sup> Thanks to the usefulness acquired through the void, the jug becomes a thing that engages physically and mentally with man in his daily life. Therefore, the thing grows beyond the abstract transcendental object to become a practical 'part of human being'.<sup>12</sup>

#### 3.1.2 The Fourfold

Heidegger defines what he calls *das Geviert* – the fourfold – as earth, sky, divinities and mortals.<sup>13</sup> Using the German etymology and double meaning behind each word, he establishes his fourfold as the precondition of existence for all things:<sup>14</sup>

- *Erde*, earth but also soil or dust, constitutes 'the literal and metaphorical ground of existence'
- *Himmel*, sky or heaven, is the complementary of earth and provides 'the context of human existence'
- *Göttlichen*, divinities or divine, introduces simultaneously a spiritual and aesthetical value
- *Sterblichen*, mortals, complement the divinities and, by accentuating human mortality, appreciate the value of life as opposed to nothing. Death acquires a positive connotation to be celebrated rather than feared.

Each thing is therefore characterized by its distinctive balance between the cardinal points of the fourfold. As a corollary, the fourfold brings all things into a 'primal oneness'.<sup>15</sup> In the case of the jug, it brings together the clay, the jug's substance, the earth, with water, the liquid falling from heaven that humans dedicate in their ritual to the gods.<sup>16</sup>

### 3.2 'Building Dwelling Thinking'

In 'Building Dwelling Thinking', Heidegger presents an ontological approach to architecture drawing on concepts developed in the 'Thing'. In this essay, Heidegger criticizes modernist architecture for being primarily concerned with technical issues, forgetting its original meaning of letting man dwell on earth.<sup>17</sup> In order to explain this argument, Heidegger explores the fundamental relationship between building, dwelling and thinking by referring to those words' etymology. In this context, 'thinking' corresponds to the awakening of our consciousness to our surrounding environment and to our position and behaviour regarding this surrounding environment. 'Building' is the spatial manifestation of our thinking and embodies our manner of being in the world, of 'dwelling'.

#### 3.2.1 Building Dwelling as manner of being

According to Heidegger, modern architecture becomes the by-product of pedantic professionals whose consumption-oriented strategies or systematized construction take over the practicalities of true inhabitation.



Their visual and aesthetic issues transform architecture into a model, an ideal object instead of a useful, inhabitable thing.<sup>18</sup>

In this context, Heidegger proposes to replace the word 'architecture' with 'building' and 'dwelling' by reminding the reader of the fundamental meaning lying behind these words. In German, *bauen*, to build, can be etymologically associated with farmer, and by extension to cultivating in the original sense of regarding culture.<sup>19</sup> In consequence, building doesn't only encompass erecting structures for Heidegger; it is also akin to 'nurturing a seed into a plant':<sup>20</sup> 'mortals nurse and nurture the things that grow, and specially construct things that do not grow. Cultivating and construction are building in the narrower sense.'<sup>21</sup> *Wohnen*, to dwell, can be related to remaining in peace, and by extension to being free and safe from danger.<sup>22</sup> Thus, dwelling entails that man feels familiar and at ease with the surroundings. Furthermore, building and dwelling also share the same roots with *sein*, to be, which linguistically demonstrates that the act of both building and dwelling represents the manner of being in the world.<sup>23</sup> In other words, man reflects his manner of being on earth through the act of building as nurturing, which enables him to be at peace with the world.

### 3.2.2 Thinking as awakening

For Heidegger, dwelling transforms a location into a place by siting a building.<sup>24</sup> When the builder chooses a location to site his building, this location becomes a place thanks to the dwelling that is established by the building. This place is delimited by boundaries that are not visual or physical but rather emotional, intangible and continuously remodelled because it exists only through our evolving experience. Heidegger calls those boundaries 'horismos',<sup>25</sup> horizons, because they are the ungraspable, elusive and unreachable lines in space that cannot be drawn as a clear line on a map. Horizons of different places endlessly multiply, overlap and fluctuate to form the general context of space. Thus space, according to Heidegger, only exists as an infinity of places, places of which our consciousness is made aware by the presence of the building: 'When we think, in the manner just attempted, about the relation between location and space, but also about the relation of man and space, a light falls on the nature of the things that are locations and that we call buildings.'<sup>26</sup> Reciprocally, building involves thinking and awakening to places and spaces in the prospect of dwelling: 'the relationship between man and space is none other than dwelling, strictly thought and spoken.'<sup>27</sup> Thus, thinking gives the true significance to building and dwelling.

### 3.2.3 Architecture as built thing

Using again the etymology, Heidegger remarks that space initially designates 'something that has been made room for'<sup>28</sup> and, in his philosophical context, a building, by providing a place, makes room for gathering and housing the fourfold.<sup>29</sup> For him, this 'fourfold preserving is the simple nature, the presencing, of dwelling.'<sup>30</sup> In short, this manner of gathering and maintaining the fourfold through building represents our manner of being in the world, our dwelling. In this respect, an architectural edifice is supplanted by a 'built thing'<sup>31</sup> in the Heideggerian sense: the act of building reorganizes materials from the earth and weather from the sky for the inhabitant to dwell in a world offered by the divinities. The built thing is thus perceived as part of a collective whole through the oneness of the fourfold. Following the etymology of *bauen* as 'cultivate', the built thing also grows or evolves through the interaction with its inhabitant who constantly nurtures it as his manner of being in the world. As a result, Heidegger's built thing brings the architectural priorities back to the needs and experience of an inhabitant.

## 4. Heidegger in the light of the oriental void

Heidegger's essays 'The Thing' and 'Building Dwelling Thinking' can be read through the filter of the oriental void and the Taoist architectural precepts.

### 4.1 Heidegger's void

Heidegger's void concept expressed in 'The Thing' can be compared to the oriental void. It is not a relative emptiness that waits to be filled by something, but the opposite. To empty the jug is equivalent to clearing and making an openness that gathers and stores, making this void a constant source of abundance. It grants the freedom of making all situations possible and is therefore perceived as a whole comprising all the potentialities of a being, which is then always in the process of becoming, a distinctive quality of the oriental void. As supported by Miguel de Beistegui in *The New Heidegger* (2005):

It is tantamount to saying that this emptiness, far from being a lack or a default, is rather an excess, a reserve and thus also always to come (the fullness of what is still undecided); it is the (virtual) plenitude of being, which must not be mistaken for the (actual) presence of beings.<sup>32</sup>



In 'Building Dwelling Thinking', Heidegger's built thing is made useful thanks to the space it contains. This space makes room – or the void – to receive the built thing's usefulness through the usage made by its inhabitant. In this respect, the built thing allows the user to inhabit 'according to a creative interpretation of their experiences'.<sup>33</sup> Engaging the user's imagination, this intention rejoins oriental architecture's precept of imperfection and incompleteness that invites the inhabitant to participate in the making and transforming of the building. The Heideggerian space accumulates thereby infinity of places whose indefinable boundaries constantly blur into one another according to the user's imagination and sensorial experience. Heidegger's space then resonates with the borderless space of the oriental space-time structure where an additive process erases all beginnings and ends to retain only the transitory in-between. This space recalls therefore the image of a fleeting cloud which epitomizes the concept of the oriental void.

## 4.2 The oneness of the Fourfold

According to Heidegger, it is by virtue of the fourfold that building dwelling thinking are brought together as interconnected notions; thinking defines the space and site for the fourfold and building gathers the fourfold, while dwelling preserves the fourfold. Thus building dwelling thinking belong to one another as different parts of the same wholeness: 'In "Building Dwelling Thinking" – note the absence of commas, intended to enforce the identity of the three.'<sup>34</sup> In this respect, the fourfold echoes the Taoist concept of the median void that brings all components of the universe into the oneness of the supreme void.

Architecture as built thing participates in a greater whole through the fourfold precondition of existence, where metaphysic – mortals and gods – co-exists with the tangible – earth and sky – in a fluid continuum. The built thing necessitates a dynamic equilibrium to be maintained among those cardinal points of the fourfold, in the same way that there is a balanced oscillation involved in the Taoist bipolarity architectural precept. From the fourfold precondition, the sky component introduces the weather as well as temporal features such as the passing seasons or circadian cycle. This ever-shifting context generates a 'sheltering' architecture, which does not isolate the user from the outdoor climate but rather offers reconciliation with the seasons and inclement weather.<sup>35</sup> This architectural observation echoes the oriental architecture in its search for harmony and communion with nature. It is particularly well fitted to the oriental traditional house whose boundaries are permeable to weather and more attuned to the passing of time.

## 4.3 Building Dwelling Thinking as the becoming

When considering dwelling as manner of being in the world, Heidegger endorses the understanding of the present in the context of the oriental space-time structure, where the present is captured in the manner of being through its act of becoming, the actualization of a potentiality. In consequence, building embodies the becoming or the actualization of one of the many potentialities offered by the void of the built thing. This actualization is realized by the thinking which gives meaning to building and dwelling, and corresponds to man's awakening to his surroundings. In this respect, Heidegger suggests that this awakening requires a certain passivity from man. More precisely, Simon P. James explains that for Heidegger, 'To be a human is not to be a particular type of things, but to be a space or "clearing" in which things show up as things in the first place.'<sup>36</sup> In other words, man is to make room within himself in order to gather the fourfold, and by doing so, let things reveal themselves to his consciousness. This passivity immediately evokes the Taoist principle of non-action, *wu-wei*, which instigates in oriental architecture the practice of indifference and withdrawal in order to grasp the present.

## 4.4 Potency and actuality as virtual and actual space

Heidegger's void introduced concepts of potency and actuality that were not new to occidental philosophy. Potency was already put forward by philosophers as early as Aristotle (4th century BC). In his *Metaphysics IV*, potency is what remains in a state of potentiality within a real being, all of its capacities that wait to be made actual. When one of those potencies meets its adequate conditions, it undergoes the process of actualization<sup>37</sup> whereby the virtual<sup>38</sup> reaches its plenitude in the form of an act in the existing world. This bipolar relation potency-actuality is reminiscent of bipolar relations existing in Taoism. One could read the median void as the potency or virtuality where the Tao is the path that brings the potency to its plenitude, the act, under the influence of the Yin and Yang forces, the particular circumstances, at a precise moment in time.

This potency can be of two types: the passive and the active. The active potency carries in itself its own realization whereas the passive potency needs an external actor to reach its actualization. The classic example of the active potency is the seed that could grow and spread into a flower field whereas the block of granite represents the passive potency which needs the action of an artist to become a sculpture, among many other possibilities. In this perspective, occidental architecture belongs to the

V.3.2

V.3.3

V.3.2 Sliding wall panels of the *Nanzen-ji Temple* (13th century), Kyoto.

V.3.3 The rhythm of the sliding panels in the previous picture seems to be echoed in the curtain wall of Mies van der Rohe's *S.R. Crown Hall* (1956), Chicago.

passive category whereas Heidegger's built thing is akin to the active potency. The latter doesn't deny the role of the architect, but simply emphasizes the organic aspect of architecture, underlying the notion of time and growth as well as its continuous interaction with its surrounding.

Transposed to architecture, one understands that this virtual is a space of all potentialities free from mundane, material constraints that can be layered onto a real space in order to enrich its reading. This idea is corroborated by Christine Buci-Glucksmann, who wrote:

From place to virtuality, from emplacement to displacement, from site to non-site, the philosophy of artistic and architectural contemporary practices seems inhabited by a permanent nomadism, which draws zones of crossbreeding, of superimposition, of indiscernability where different worlds interlock.<sup>39</sup>

This virtuality or median void stimulates spatial and material innovations that mutate the existing space into a new one, according to conditions (technical, environmental, cultural, socio-economical ...) met at the time. This dynamic exchange between building, users and milieu produces architecture in a constant process of becoming, whose inhabitability is not defined by its enclosure or predefined functions but by the variety of potential spaces created by those endless interactions. Its actualization involves quantifications and qualifications that materialize the virtual space into a real one.

## 5. The influence of oriental void on occidental architecture

The assimilation of the oriental void into western architectural thinking through Heidegger is now followed by a discussion on the affect of the oriental void on western architectural practice. As explained in the previous chapter, oriental traditional architecture draws on Taoist precepts for its architectural directives. Chinese traditional buildings were mostly destroyed by the 1949 Chinese Revolution<sup>40</sup> while the Korean civil war (1950–1953) put the damaged country under western supervision. However, Japan's insular position reduced foreign contacts for centuries, which helped preserve its building tradition. In consequence, this section focuses on the influence of Japanese traditional architecture on occidental modernist architecture.

The void of oriental architecture left a great impression on the Bauhaus masters when they visited Japan in 1954. Walter Gropius writes enthusiastically in his *Architecture in Japan* (1960), after a three-month trip:

the old hand-made Japanese house had already all the essential features required today for a modern fabricated house, namely, modular coordination, the standard mat, a unit of about 3'x6', and movable wall panels. It deeply moved me, therefore, to come finally face to face with these houses. They represented a still living culture, which in the past had already found the answer to many of our modern requirements of simplicity, of outdoor indoor relation, of modular coordination, and, at the same time, variety of expression, and had thereby obtained a common form-language uniting all individual efforts; all these based, of course, on handicrafts, which we know are losing their foothold in our modern world and which eventually must be replaced by industrial methods and tools.<sup>41</sup>

Despite appearances, Gropius states that oriental architecture has not influenced the occidental modernist architecture, but rather they seem to have arrived at similar features through different paths. For instance, the hanging curtain walls in modernist skyscrapers call to mind window panels hanging from a wooden structure that makes the façade of a traditional Japanese house (figs V.3.2–3). The latter conforms to the desire of living in harmony with nature, a precept deriving from a secular philosophy deeply rooted in the oriental lifestyle. It also responds to the Japanese climate, mild enough to live a good part of the year with the windows open. This architecture is then kept safe from foreign influence thanks to Japan's insular geography. By contrast, occidental modern architecture originates in the post-war era's desire for radical and innovative changes for a lighter, brighter future that is made possible by advanced technology in the material and construction realms.<sup>42</sup>

Further down in his essay, Gropius points out the architectural features of the traditional Japanese house that appear fascinating and resourceful to the West:

no symmetry, which is strictly reserved for the temple as a symbol of divine perfection; no straight, imposing axes, but, instead, surprise effects and stimulation by subtly changing directions in the approaches to buildings; emphasis on human scale throughout, combined with openness and flexibility of plan. These are timeless virtues which could be utilized today, with our new technical means, even better than during the centuries of the crafts.<sup>43</sup>

Asymmetry, progressive sequence, transience or permeability are precisely the architectural characteristics of the oriental void explained in the previous paragraphs. He recognizes nature as a key factor in

V.3.4

**V.3.4** Mies van der Rohe, 1986 reconstruction of the *German Pavilion* (1929) in Barcelona. The open plan, flexibility and prefabrication of the pavilion recall the architectural layout of a Japanese traditional house. This image could for example be compared to the fluid spatial sequence of the *Katsura Imperial Palace* in the image V.2.12.



Japanese architecture, evident in the siting and relationship between the house and its garden, and the paradoxical bipolarity behind the flexibility: 'the flexibility of use of these component parts is so great that they can satisfy the seemingly self-contradictory requirement of providing unity and diversity of form expression at the same time'.<sup>44</sup>

Mentioning the Katsura imperial villa in Kyoto, Gropius also relates the complementary quality of the bipolar precept:

The use of contrasting materials which enhance each other in their effectiveness had been developed early, and nowhere one finds an attempt at 'matching' by identical forms and colours (one of the American preoccupations), but always great care in complementing, relating and counterbalancing.<sup>45</sup>

However, all these observations are not equally appreciated and are thus incorporated in occidental architecture in various degrees. Some reinforce ideas that modern architecture tries to convey in Europe. For instance, flexibility, openness and multiplicity provide clear and simple space created by an assemblage of pre-cut wooden components that strikes a chord with the modernists' adage of prefabrication, standardization and simplicity.<sup>46</sup> Some are to be inspired by, such as the appealing charm of the asymmetric Japanese garden-house relation. Others, such as, imperfection and lack of axiality, challenge rational thinking and are thus relegated to oddities.

Furthermore, some observations are only partially grasped by the West, leading to a biased perception of oriental architecture. 'Openness', for example, is not only about opening boundaries visually but also refers to physical permeability to the surroundings (fig V.3.4). Mulberry paper windows or the absence of a heating system do not result from a lack of technical knowledge in oriental architecture but stem from a desire to live in communion with nature. This is a far cry from the modernist approach where glass and concrete panels keep the weather and the garden away from the house.<sup>47</sup> Another example is the 'multiplicity' which refers not only to prefabrication of predefined pieces in the modernist optic, but also to the indifferent detachment necessary for the space-time structure specific to oriental culture. Bearing in mind that the notion of *Ma* was introduced in the West only in the 1980s by Isozaki, this concept probably evaded the modernists theoretically but was nevertheless experienced de facto as described by Gropius: 'What struck me in Japan particularly is the fact that the cultural strata of over a thousand years reach clearly into present day life ...'<sup>48</sup> This proves the

oriental space-time structure to be not only an abstract concept but also a truly palpable phenomenon.

## 6. Conclusion

Altogether, the occidental society, whether scientific, philosophic or religious, was usually wary of the void concept, considered as a harmful influence on human development. This opinion was only modified once the void was indisputably recognized in an objective and rational manner in the seventeenth century. Although some noticed the virtues of the void, its overall appreciation comes gradually along with the discovery of oriental culture.

Heidegger's architectural readings find parallel with the oriental void. While 'The Thing' establishes the void as an essential and positive value that extends in the mundane paraphernalia of our daily life, 'Building Dwelling Thinking' transforms architecture into a 'built thing', associating thereby architecture with the notion of void. Concepts developed in those essays echo the Taoist architectural precepts and therefore allow bridging the gap between the oriental and occidental void in the realm of architecture.

Writing in criticism of the modernist movement, he urges architects to reconnect with the essence of architecture that lies in the natural act of building and dwelling of a human being. Instead of creating rigid, weatherproof and financially efficient space that amputates the user from his sensorial and creative experience, architects should offer a habitat allowing man to be part of a greater cycle of the unified whole, the plenitude. Architecture becomes a built thing in the sense of an organic growth which involves a continuous interaction between the building, the user and its environment within a space-time structure similar to the oriental void. Space only exists by the actualization of a living time, and time is inscribed, literally and metaphorically, in the materiality of the void and space: 'the architecture as built temporalities'.<sup>49</sup>

Finally, European modernists were fascinated by the simple solutions to their own predicaments presented by Japanese architecture. However, this interest was sometimes prejudiced by visual resemblance that kept the occidentals from fully grasping and appreciating its underlying value.



## Conclusion of Part I

This part of the thesis established the void as an evolving hyphen that constantly joins/separates all beings of the universe in endless combinations in the oneness of the Tao: the hyphenation of the void. Its key characteristics were then, visually and metaphorically, brought to life through Chinese traditional landscape painting. They were also observed in oriental architecture through its architectonic composition, use of materials and relation to the surrounding environment. Further etymologic analysis pointed out the role played by the void in the distinctive oriental space-time structure through which a time component was introduced to architecture.

When European modernist architects visited Japan, they directly experienced the local traditional architecture. This first-hand exposure was nevertheless only partially grasped: features validating modernist ideas were taken on board while the rest was barely noticed or was misconceived. This inclination was mainly due to the hegemony of the full in occidental architecture that demoted the void to secondary matter.

Filtering Heidegger's architectural essays through the oriental void made its concept more accessible to the West by using terms familiar to occidental architecture. In this perspective, the void took back the limelight from the full, the solid, to become the essential condition of architecture. It was no longer about presence or absence but about a latent potency that awaited actualization to become reality. In result, architecture was perceived in an organic manner, as a participant in a greater unified whole in an ever-changing space-time continuum.

## II Hyphens

- 1 The Moss
- 2 The Ruin
- 3 The English Picturesque Landscape Garden
- 4 The Chinese Garden
- 5 Alexander Pope's Grotto

The second part of the thesis consists in identifying themes or subjects that will transform the philosophical principles of the oriental void into architectural design devices: the hyphens.<sup>1</sup> As previously explained, they can be divided into two groups, the conceptual and the material hyphens. These definitions are not mutually exclusive so that a theme or subject can be one or both hyphens simultaneously. On the one hand, conceptual hyphens merge diverse abstract ideas by combining their original meanings into a new one. They can also appear as recurrent or common themes underlying those disparate notions. On the other hand, material hyphens convert abstract ideas into palpable and tangible parameters that can then be directly incorporated in the architectural design process. All these hyphens can ultimately cross-fertilize to generate countless other hyphens.

In the context of my research, moss emerges as a crucial material hyphen that enables manipulations necessary to develop the architectonic qualities of the oriental void. Its study unveils the ruins as a material but also as a conceptual hyphen that conveyed the precepts of the oriental void mainly through the ruins' associative potential. Moss's and ruins' hyphens interweave each other's path to breed another hyphen, the English picturesque landscape. Their evocative quality combined with the eighteenth-century empiricist approach to nature generates a distinctive dialogue between the picturesque garden and its visitor. This particular relation echoes with the dynamic flow of the Tao through which one attains the plenitude. Picturesque gardens were partially influenced by the east–west cultural exchange happening at the time. In consequence, Chinese gardens surface as another conceptual hyphen. They link the oriental concept of *Ma* to the occidental concept of *milieu*<sup>2</sup> while also granting a new material hyphen in the form of Chinese rockeries. All these hyphens will be discussed in detail in the following chapters.



# 1

## The Moss

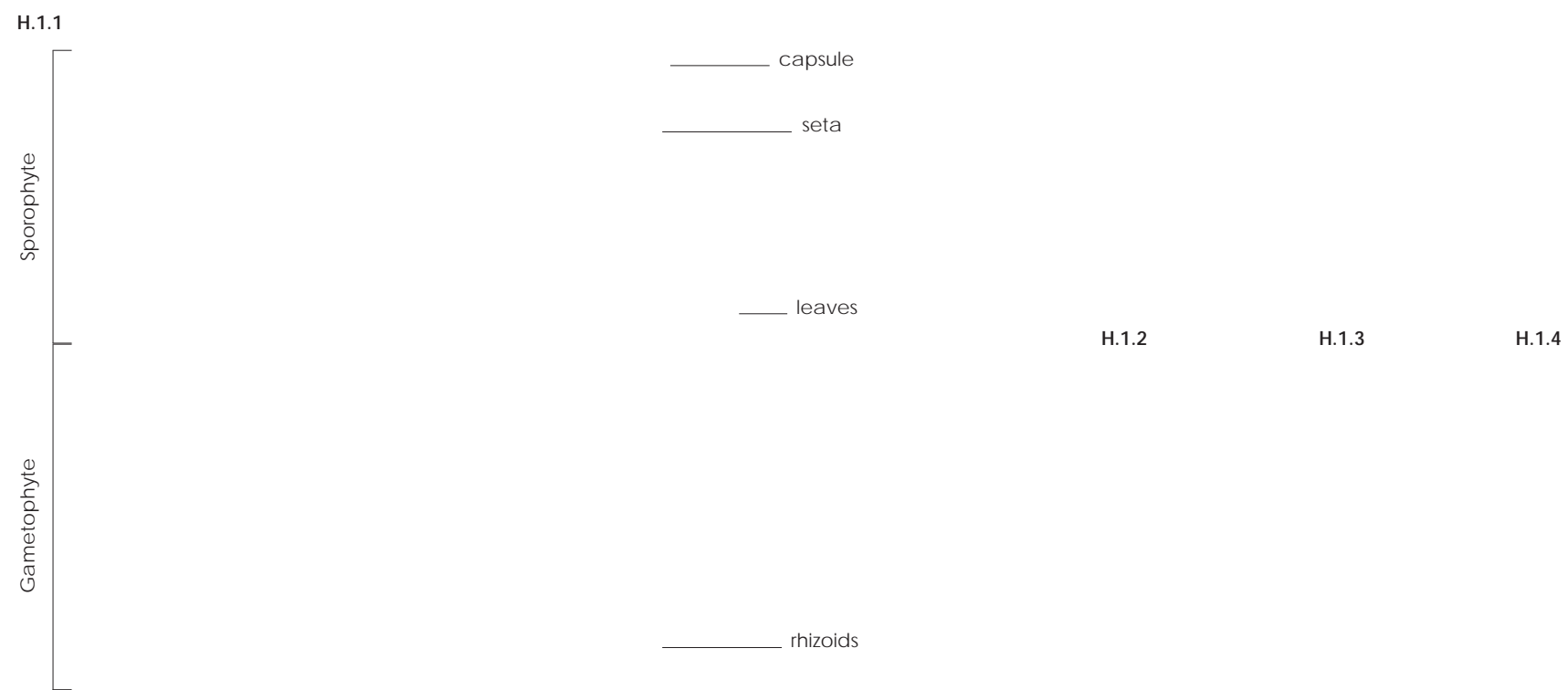
While reading and collecting data about the oriental void, I was looking for a site to start an architectural project. In parallel, I also attended the course Theorizing Practices given by Jane Rendell. She structured the course with morning discussion sessions that were extended in the afternoons by complementary participations from practising professionals. One of those presentations was an excursion to the City of London to trail a lost river named the Walbrook. The street-level promenade guided by Jane Trowell of Platform<sup>1</sup> followed the hidden bed of the ancient river up to the Thames. Her intention was to demonstrate the impact of political and economic decisions on the environment. Thinking back to the key role played by water in Chinese traditional landscape painting, I decided to take the Walbrook as a guideline to search for my first site. What struck me the most while strolling along the invisible river was the recurrent apparition of mosses and algae that betrayed the underlying humidity and dirtied the neat streets of the City of London. In particular, mosses proved to be more versatile than algae as they could thrive far from direct water sources. This chapter will follow the subsequent study of mosses which quickly revealed their potential to serve as a tool for materializing the abstract notions of the void and full.

### 1. The moss cycle

Mosses' life cycle alternates between two phases: the gametophyte, the dominant generation, which is larger, long-lived, photosynthetic; and the sporophyte, the lesser generation, which is smaller, short-lived and nutritionally dependent on the first generation (fig H.1.1).

Mosses do not produce flowers, fruits or seeds but spores. If spores are carried away by wind or animals to places where mosses can grow, they germinate into thin, hairy filaments that work into the soil, joining each other from end to end horizontally to form rhizoids (fig H.1.2). These mainly function as anchors for the upcoming leafy shoots, given that they have very limited aptitude to withdraw water from the substrate, albeit they might be sufficient to nurture some types of endohydric<sup>2</sup> mosses.

However, the vast majority of mosses present a lack of internal water-conducting tissue, the ectohydric<sup>3</sup> mosses, which confines them to collecting mineral nutrients from the water running over their leaves and stems through microscopic pores. This constitutes the first phase of the moss cycle, the gametophyte.



**H.1.1** Janet Marsh, *drawing of a clump of moss* (1979).

**H.1.2** Moss rhizoids' net structure.

**H.1.3** Male gametophore with antheridia.

**H.1.4** Female gametophore with archegonia.

**H.1.5** Haircap moss' sporangium with operculum.

**H.1.6** Detail of a peristome.

**H.1.7** Sphagnum clump gametophores.

**H.1.8** Moss mat in Japanese garden.

**H.1.9** *Grimmia Pulvinata*.

**H.1.10** Moss turf of *Schistidium antarctici*.



Mosses are nonvascular plants that can reproduce both sexually and asexually. Asexual reproduction is less common and basically consists of the regeneration of plant material, leaves or other parts, that fall to the ground and generate secondary plants which carry new buds. Sexual reproduction is more widespread. The gametes of the moss develop within organs that have protective jackets of sterile cells that prevent the gametes from drying out during development. The male organ is called the antheridium and produces flagellated sperm (fig H.1.3), whereas the female organ, the archegonium, produces a single egg, the ovum (fig H.1.4). As in algae, the flagellated sperm require water to swim from the antheridium to the archegonium and fertilize the egg. For most species, a film of rainwater or dew is sufficient for fertilization.

In the second phase of the moss, this fertilization results in an embryonic sporophyte within the archegonium which grows into a long stalk whose base remains attached to the archegonium as the top emerges (fig H.1.5). A capsule (sporangium) which contains the spores is formed at the tip of the stalk. It possesses a lid (operculum) which is separated from the rest of the capsule by a ring (peristome) provided with tooth-like segments (fig H.1.6). When spores are mature, the stalk bends and the lid eventually detaches. At that moment, the peristome teeth uncurl or curl according to the air humidity, releasing gradually the spores that are blown away by the wind.

## 2. Water

As explained above, water plays a significant part in the moss cycle, be it the metabolic system or the sexual reproduction. Therefore it is vital for mosses to develop specific features in order to avoid water loss. This compels them to be confined to humid surroundings and increase their poikilohydric ability, i.e. an aptitude 'to resume normal metabolic activity on remoistening albeit mosses dry almost as rapidly as their environment'.<sup>4</sup> This latter quality enables them not only to grow in hostile habitats where higher plants cannot survive but also to endure extended periods of desiccation remarkably well – up to nineteen years for some particular specimens such as the *Anoetangium compactum*.

Another strategy to delay water loss operates through the group growth configuration: the turf or the mat. Mosses, unlike vascular plants, do not have an internal structure allowing them to support their own weight more than a few centimetres off the ground. Hence, some of them are recumbent or crawling plants, forming mats composed of horizontal

layers, the older plants dying to form the soil for the younger generation, the endohydric mosses (figs H.1.7–8). Others are erect species, supporting each other in varying density to form a turf, the ectohydric mosses (figs H.1.9–10).

In each case, the specific formation tailored to the mosses' specific needs usually offers a spongy or capillary quality which enables them to prevent the water from getting deep into the soil and to intercept thereby the essential mineral substance. Furthermore, those configurations slow down water evaporation by generating a rough overall surface that forms a thick layer of still air over the mosses when the wind speed is moderate. Water lost by evaporation must diffuse through this boundary layer, and the thicker it is, the slower is the evaporation rate.

Finally, the study of mosses' anatomy reveals that, for instance, their waxy cuticles retard water loss from the leaves whereas their jacketed organs keep the spores from drying out. Furthermore, some mosses have leaves with hairy points that reflect the incoming solar radiation so that less energy is absorbed and less water evaporation occurs. In fact, when mosses are overexposed, the evaporation accelerates and the mosses' water retention capacity falls, thereby threatening to curtail the photosynthesis process. However, mosses need to get sufficient light in order to provide for the reversed respiratory course at night. This phenomenon is called the light compensation point, at which the photosynthetic fixation of CO<sub>2</sub> is just balanced by respiratory production of CO<sub>2</sub>. Hence, in order to replenish the reserves essential for photosynthesis and repair their damaged cell membranes, mosses require considerable periods of adequate light and water supply.

## 3. Pollution

When observed under the microscope, the surface of mosses' leaves is often rough and made of countless holes propitious to the trapping of tiny particles. Hence, mosses are quite sensitive to air and water pollution (figs H.1.11–15).

Of all gaseous pollutants, sulphur dioxide (SO<sub>2</sub>) causes the most widespread damage to mosses, bearing in mind that the effects of gaseous fluorides (HF and SiF<sub>4</sub>) are narrowed to a certain type of area while little is known about the impact of ozone (O<sub>3</sub>) on mosses. SO<sub>2</sub> mainly interferes with moss evolution in cool, moist periods of the year, when moss metabolism attains its climax in growth and reproduction. Besides,

H.1.11-14

H.1.15

H.1.16

H.1.17

H.1.18



- H.1.11-14 Several shots of a sphagnum moss leaf under a microscope.
- H.1.15 Sphagnum moss leaf clogged with diesel pollutants.
- H.1.16 Moss wads and moss rod used as caulking materials in wooden boat.
- H.1.17 Woven moss basket.
- H.1.18 Moss insulation behind white horizontal timber strips, Bravacovo.

the poikilohydric quality of the moss facilitates  $\text{SO}_2$  concentration at high level since it is a very soluble gas which will continuously dissolve in the moisture until equilibrium is reached. As for metallic pollutants, the damage depends on the metal classification and its accumulation on the mosses' leaves. Lead (Pb), as a petrol additive formula, is the most toxic pollutant for their environment.

The effect of pollution on mosses results in the gradual discoloration of the leaves, from tips to shoots, along with a reduction of the thickness and the biomass of mosses. In the worst cases, capsule production decreases, withering the moss coverage and leading eventually to the disappearance of the specimen from the polluted zone. However, when confronted with a lead-polluted environment, mosses have evolved detoxification mechanisms to improve their acclimatization.

Moss has great potential for monitoring levels of air and water pollution around urban and industrial areas (e.g. Fe, Mn, Zn, Cu, Pb, Cr, Ni, Mo, Cd, Hg). There are three methods for monitoring pollution:

- using a flat bag of about  $10\text{cm}^2$  of nylon net, filled with clean, acid-washed sphagnum that is plunged in the river or suspended from posts of standard height
- placing the moss in Perspex cylinders, wrapped in nylon netting and secured in the river
- observing the eruption of certain types of moss carpets in polluted areas.

In each process, the pollutant level in the moss should vary according to the distance from the pollution source to permit reliable prediction. By extension, some mosses are used as filters in the effluents of rivers to remove a wide variety of pollutants.

#### 4. Usage of moss

Unlike in our contemporary society, in the past mosses were eagerly used for many different purposes.<sup>5</sup> Back in the Bronze (800 BC) and Iron (200 BC) ages, mosses served as caulking material between the wooden planks of boats (fig H.1.16). Such techniques were still used in the late sixteenth century in Holland and Belgium and until the nineteenth century in Scotland. Then in the north of England, around AD 90–120, floor coverings in dwellings were composed of thick layers of dried bracken fern, straw and moss. Mosses were also used as lining in storage pits for vegetables and fruits, as puffballs to staunch the bleedings of cuts and as tinder

material. Moss fibres, on the other hand, were stripped of their leaves and plaited to make ropes and baskets (fig H.1.17).

In the nineteenth century, their usage expanded to building construction, for blocking holes in walls in Scandinavia and building log houses in the former USSR (fig H.1.18). Aquatic mosses were also applied to fill spaces between chimneys and walls in order to keep out air and prevent walls from catching fire. Then England and Scandinavia employed wads of mosses for packing and stuffing portable beds, mattresses, pillows ... and for making doormats and dusting brushes. Furthermore, mosses served fashion trends in England and America, not only by decorating plant pots and flower arrangements but also by trimming ladies' hats and bonnets with moss braids and cords. In North America, besides using them as lamp wicks, Indians worked the mosses into pastes for medical purposes: as cold compresses to alleviate the pain of burns and cover bruises or as padding under splints in the setting of bones.

At the beginning of the twentieth century, mosses were exploited for their absorbent value as surgical dressings, especially during the First World War. Moss dressings were preferred to cotton ones as they were four to five times more absorbent, soothing and cold, and could be left on wounds for up to two to three days, which gave time for the soldier to be transported from field to hospital. Plus some mosses, such as sphagnum moss, have themselves mild antiseptic properties, unlike cotton. For all these reasons, many factories were created immediately after the war in Germany, UK, USA and Canada to manufacture moss dressings. However, their unappealing colour as well as their production cost led to the decline of moss dressings in favour of cotton ones. Peat, resulting from 'the accumulation and compression of mosses, sedges, grasses, reeds and shrubs',<sup>6</sup> was also made into blocks for burning or into peat wool for dresses, insulation or paper.

Nowadays, mosses are used in orchards as mulch to protect fragile plants or trees during winter time. They also indirectly provide construction materials through the precipitation of calcite on thick spongy growths of moss that develop on rocks in rivers (figs H1.1.19–20).<sup>7</sup> The moss provides

surfaces which can absorb, retain and expose copious thin films of calcium bicarbonate, containing water for effective evaporation with consequent loss of  $\text{CO}_2$  and precipitation of calcium carbonate in the form of calcite which hardens around the mosses taking a mould of this form.<sup>8</sup>

H.1.19

H.1.20

H.1.23

H.1.24

H.1.21

H.1.22

- H.1.19 Bryum Pseudotriquetrum moss forming travertine.
- H.1.20 Calcite deposit on Cratoneuron Commutatum moss.
- H.1.21 Travertine's porous texture.
- H.1.22 *Nanzen-ji* rock garden, Kyoto.
- H.1.23–24 Wall-covering moss perceived either as a protection or a decaying process.

This brownish limestone is called travertine, derived from the name of an ancient Roman town 'Tibur', known today as Tivoli (fig H.1.21). Moreover, the *Engineering Science Reports* of December 2002 declared that a group of researchers developed a wall unit system covered with mosses in Kyushu University. Its principle relied on the fact that moss needs not soil but alveolar materials for anchoring rhizoids, hence a reduction in the weight of the green wall system. A six-month test period was carried out on wall unit prototypes regarding moss growth, evaporation level, heat reflection and other physical properties. After further tests simulating the case when those units were spread at a larger scale, results revealed a significant drop in the temperature of the building's wall and of the air in the city.<sup>9</sup>

The psychological value of moss is not to be overlooked either. In oriental gardens, tufted mosses create a visual enthrallment that induces a soothing feeling of serenity, inviting contemplation and reflection (fig H.1.22). In western gardens, the sporadic use of mosses brings a part of untamed and mysterious nature under man's authority but it also stirs up feelings of melancholy when combined with old ruins. On buildings, mosses incite a natural decay process and modify the user's perception of architectural and spatial qualities, through the muffling of sound and the blurring of boundaries. It is to be noted that, according to the British Lichen Society, even though mosses do damage the surface of stones, they may also give a protective coat that can endure harsh weather conditions (figs H.1.23–24).

## 5. Moss and the oriental void

Mosses seem appropriate to reflect and materialize the notion of the void and the full for several reasons. First, they have an ambiguous biological identity. They are categorized as a bryophyte in-between fungi and algae and also display an alveolar structural anatomy which is curiously closer to that of sponge species than to that of plant varieties. In this respect, mosses not only ally the void and full within their materiality but also endorse this in-between status, characteristic of a hyphen.

Thanks to their biological features, they also have the obstinate ability to discover and survive in places where other plants cannot grow, such as cracks or fissures in trees and rocks, or damp and shady spots. This ability makes mosses the literal and metaphorical detector of the in-between, the void within the full or, in other words, the void materializer, as they bring forth the intangible void into a palpable space.

Moreover, since they filter the surrounding air and water in order to gather the mineral substance needed for their survival, mosses can be considered as reservoirs where large amounts of available nutrients found in the ecosystem are gathered. As a result, they are the synoptic presentation of the macro-ecosystem to the image of the median void which constitutes a homothecy of the supreme void. Mosses are the microcosm that captures the essence of their surroundings.

On the other hand, mosses also demonstrate a high level of acclimatization which enables them to adapt readily and relentlessly to any type of environment. Their survival relies on them continually evolving, making their life a constant process of becoming. This manner of being embodies the fluctuant attitude of the void and the full as well as the distinctive properties of the oriental space-time structure.

Mosses also reflect the transitoriness of all being. In oriental Buddhist gardens, the evergreen colour of mosses symbolizes the permanence of the universe whereas their shape refers to the metaphor of running water or the waving sea. These gardens tend to interpret and idealize nature. The viewer, through contemplation, puts himself in perspective as a transient element in the fullness of the universe. In the occident, mosses are often related to the notion of decay, being regarded as an incentive for building degradation. Yet in contrast, patches of moss on barks or in the desert introduce a life cycle in areas believed inert or inanimate. In both cases, the presence of moss eradicates the idea of the atemporality of a condition, enhancing therefore the transitoriness of all things.

By contrast, in occidental culture, the moss is mostly related to the concept of ruins, especially since the eighteenth century when Giovanni Battista Piranesi described through a number of drawings and etchings Roman ruins invaded by nature. However strong and eternal an edifice is built, it will always be exposed to decay and decline, dissolving finally into useless ruins. Ruins are in turn often associated with English picturesque landscapes. The eighteenth-century picturesque period built many fake ruins to be integrated into garden compositions in order to suggest a certain melancholy or longing for something irrevocably lost. Discussions regarding such ruins will be further detailed in the following chapter.

In both cases, the moss tends to demonstrate the perennial triumph of nature over man-made constructions and civilizations. This is precisely the reason why moss cannot only be seen as prejudicial for being related to decay, deterioration and invasion; it can in fact also be seen as an incentive for the beginning of a new cycle, when it prepares the site



for superior plants to come and propagate, and even, as observed throughout history in different countries, as a protection or construction material. Moss is the hyphen between a finishing state and the birth of another phase.

## 6. Conclusion

Moss appears to be both an adequate material and a conceptual hyphen to interpret the metaphysical notions of the oriental void. It offers the void the necessary substance for architectural manipulations and experiences that will ultimately enable the incorporation of the oriental void into occidental architectural practice. It is precisely during the usage of moss amid the first architectural project that the next hyphen comes into sight. The *Bank's Barometer*<sup>10</sup> exploits moss's properties to transform its site into a sensorial experience of ruins. Ruins will therefore be further discussed in the following chapter.





## 2

## The Ruins

During my investigation on moss, the site for my first project was decided: the Tivoli Corner of the Bank of England. Its subsequent study introduced me to John Soane, his passion for ruins and his representation of the Bank of England in a ruinous state. This prompted my interest in ruins, which ultimately emerged as a precious hyphen in the context of the thesis.

In Europe, ruins are a familiar sight in the country landscape or cityscape to the delightful pleasure of the stroller.<sup>1</sup> They are part of the common cultural heritage and embody various complex meanings according to different periods of European history. In this chapter, a focus on the picturesque era will demonstrate that ruins were not merely related to negative, gloomy feelings but also perceived to have positive and creative value thanks to the theory of association.

### 1. From Antiquity to the Middle Ages

In the exhibition catalogue *Visions of Ruin* (1999), David Watkin wrote in his essay 'Built Ruins: The Hermitage as a Retreat' that ruins have fascinated generations of civilizations throughout history. In ancient societies, ruins were usually associated with war, where enemies' ruins attested to war victories and the fair rule of moral justice while one's own ruins fomented feelings of hatred and vengeance. Hebrew poets populated ruins with wild beasts and imaginary creatures springing from their fantasies, turning ruins into mysterious and lugubrious places.<sup>2</sup>

This range of feelings stirred up by ruins had appeared by the second century BC, according to Rose Macaulay. Vestiges of Mycenae, Carthage and Troy were equally popular among Romans and Greeks who looked at them with great admiration, as testimony to their impressive wealth and accomplishment. In consequence, classical antiquity saw its villas adorned with frescoes depicting remains of crumbled temples as desolate backdrops for mythological characters. Those ruins also inspired some Roman architectural features, as can be observed in Hadrian's Villa in Tivoli (fig H.2.1). In this context, ruins began to be associated with sentiments of gloominess and fallen greatness, which provided a certain perverse pleasure that satisfied the dark side of human nature: 'beauty in the dark and violent forces, physical or spiritual, of which ruin is one symbol'.<sup>3</sup>

In the Middle Ages, ruins were generally related to religion. Following the shift of religious authority from Judaism to Christianity, men disassembled synagogues to supply materials for building new churches. These scenes

H.2.2

H.2.1

H.2.3

H.2.4

- H.2.1     *Hadrian Villa* (2nd century AD), Tivoli.
- H.2.2     Bernini, *The ruined bridge at the Palazzo Barberini* (1679), Rome.
- H.2.3     Piranesi, *Rovine del Sisto, o sia della gran sala delle terme Antoniniane, Veduta di Roma* (ca. 1766).
- H.2.4     Piranesi, *Veduta degli Avanzi di alcune Camere sepolcrali, essenti sull' antica Via Appia fuori di Porta S. Sebastiano, La Antichita Romane, v. II* (1756).

became the favourite theme for the background of fifteenth-century religious painting, symbolizing the decay of paganism throughout Europe. As a result, ruins eventually stood for the ephemerality of man-made realizations against the eternal permanence of biblical values, such as death, the Last Judgement, heaven and hell.

## 2. From the Renaissance to the eighteenth century

In the course of early Renaissance, the associations of ruins were gradually transferred 'from the religious to the secular world'.<sup>4</sup> In the book *Hypnerotomachia Poliphili* (1499) by Francesco Colonna, a couple walked through a romantic landscape composed of bits and pieces of a disintegrated temple overgrown by nature, admiring the antique legacy left behind. Here, ruins became the catalyst that aroused various feelings and emotions in the viewer. They also presented a lesson of humility by embodying the submission or vulnerability of human civilization to time and nature. In parallel, fake ruins were introduced in architecture during the sixteenth century. The first recorded fake ruin was a hermitage built by Girolamo Genga in 1510 for the Duke of Urbino. Located in a park, it consisted of a two-storey building designed as an antique ruin that offered momentary withdrawal from society. Fake ruins mostly developed and flourished during the two following centuries.

In the seventeenth century, fashionable gentlemen-connoisseurs travelled in Italy on the 'Grand Tour' to admire classical ruins. They brought back small paintings, etchings and even fragments collected on site as souvenirs of their journey. Three main consequences could be observed. First, ruins were henceforth scientifically researched and preserved by antiquaries and archaeologists who kept discovering new sites, broadening thereby European historic and geographic horizons. Second, ruins were no longer relegated to background scenery, becoming for two centuries part of the main subject of paintings as seen in works by Monsu Desiderio and Salvator Rosa.<sup>5</sup> Finally, the fascination with classical ruins set a trend for ruin-imitation in the form of small pieces that could be incorporated in a building's composition back home. This phenomenon culminated in the seventeenth- and eighteenth-century fake ruins that were built in European picturesque gardens for the sake of their owners' pleasure. This trend was initiated by Gianlorenzo Bernini's ruined bridge at Palazzo Barberini in Rome (1678), reminiscent of the ancient Hadrian's Villa landscape (fig H.2.2).

### 2.1 Ruins during the English picturesque

Ruins in the picturesque era are of particular interest for my thesis because it was during this period that ruins acquired an ambiguous identity: evocative and expressive, natural and artificial, pulling in the cognitive and imaginative abilities of the viewer. Ruins were not just passively observed with gloominess but were actively built with passion across Europe.

In the eighteenth century, Piranesi's engravings reinforced the interest in ruins in architecture. His keen eye meticulously scrutinized Roman ruins in order to visualize their original appearance and, by extension, extrapolate the Roman culture of antiquity. He reconstructed those remains according to his creative imagination, making his *Vedute di Roma* (started in 1747) and *Le Antichità Romane* (1756), an in-between picturesque painting and documentary sheet that depicted the ruin's structure, material and outline in its suggested historical context (figs H.2.3–4).<sup>6</sup> In consequence, Piranesi's enthusiasm and curiosity were expressed through his detailed and precise drawings which exceeded and wiped away the usual nostalgic gaze or lingering melancholy about ruins.

#### 2.1.1 Theory of association

Following the reinstatement of classical values in the seventeenth century, beauty and aesthetic theories were based on classical canons such as mathematical proportion or geometry. Those were inherent, objective qualities that were perceptible to the eye of an educated man.<sup>7</sup> The eighteenth-century picturesque went against this current by stating that beauty was a subjective quality originating in the mind of the viewer and devised aesthetic philosophies with regard to sensations and pleasure, such as the theory of association. The latter concept derived from John Locke's empiricist ideas found in his *Essay concerning Human Understanding* (1690): 'our world is perceived through our senses that communicate simple, immediate ideas to our mind. Our mind accumulates those spontaneous ideas then organizes and associates them into more elaborate configurations of ideas'.<sup>8</sup> This view was later developed by Edmund Burke in his *Philosophical Enquiry into the Origin of our ideas of the Sublime and the Beautiful* (1756).<sup>9</sup> Uvedale Price, Richard Payne Knight and Archibald Alison were among the fervent followers who then took this thinking to its farthest.

This theory mostly relied on visual perception, through which an object would immediately and instinctively affect the senses and trigger a series

H.2.5

H.2.6

H.2.7

- H.2.5 Ruins of *Rievaulx Abbey* (12th century), Yorkshire.
- H.2.6 Ruins of *Pompeii* (79 AD).
- H.2.7 Charles-Louis Clérissseau, *Architectural Fantasy* (1782).

of chain reactions where one's memories and imagination associated the original object with other things that shared its emotional quality. This creative mental process connected those disparate images and ideas according to 'perceptual and metaphorical similarity'<sup>10</sup> to arouse pleasure and new feelings in the viewer, as stated by Knight:

To a mind richly stored, almost every object of nature or art, that presents itself to the senses, either excites fresh trains and combinations of ideas, or vivifies and strengthens those which existed before: so that recollection enhances enjoyment, and enjoyment brightens recollection.<sup>11</sup>

Knight specified that this association should be free from all constraints in order to obtain reasonable but, more interestingly, unpredictable and uninhibited combinations. The outcome would differ for each individual as it would depend on the observer's personal experience.<sup>12</sup> Thus, the association was less rational thinking and more intuitive perception by the sub-conscious, according to which every object that man saw affected either one of his fundamental instincts: self-propagation – associated with feelings of pleasure, the beautiful; and self-preservation – associated with feelings of fear, the sublime.<sup>13</sup> As a result, beauty was not about meeting abstract standards but about inducing emotions.

In this context, ruins gained a positive value by becoming a catalyst for the viewer's playful imagination instead of being exclusively related to gloominess or the glorious past. They inspired endless delightful reveries, and the viewer's allegoric fantasies were epitomized in the form of fake ruins which rapidly proliferated throughout the century. Kenneth Clark illustrated the phenomenon in his *Landscape into Art* (1950) by stating: 'In this strange form of creation it seemed as if ruin fed upon ruin and propagated after its own nature, filling a world of dream with spongy products of unreason.'<sup>14</sup>

Those ruins were strategically placed in parks or gardens, usually privileging remote and isolated sites. They closed vistas or were half-buried in vegetation, in which case the viewer was forced to use his imagination to appropriate and complete them in his mind. This was best explained by Arthur Young:

[Ruins] generally appear best at a distance; if you approach them the effect is weakened unless the access is somewhat difficult. And as to penetrating every part by means of artificial paths, it is a question whether the more you see by such means does not

proportionately lessen the general idea of the whole. Looking as it were stealthily through passages that cannot be passed, heaps of rubbish stopping you in one place, broken steps preventing both ascent and descent in another; in a word, some parts that cannot be seen at all, others that are half seen and those fully viewed broken, rugged, terrible. In such the imagination has a free space to range in, and sketches ruins in idea far beyond the boldest strokes of reality.<sup>15</sup>

### 2.1.2 Ruins as moral and historic model

Estate owners enjoyed building fake ruins that would enhance the picturesque quality of their landscape garden. Those constructions didn't have any useful function other than to provide pleasure for garden strollers, following the association theory. They were to express the designer's sensibility and draw out specific emotions from the viewer. Their scheme and characteristics were discussed in two major texts, *Elements of Criticism* (1762) by Henry Home and *Observations on Modern Gardening* (1770) by Thomas Whately. Albeit most conventional ruins were of classical style, gothic ruins were favoured in the English picturesque for two main reasons. On the one hand, Henry Home, Lord Kames, explained this preference by a moralistic reason, stating that ruins acted as an allegory for the decadent and corrupt English society of the eighteenth century. In this respect, classical ruins overgrown by vegetation embodied 'the triumph of barbarity over taste: a gloomy and discouraging thought',<sup>16</sup> while gothic ruins reflected resilience or 'the triumph of Time over strength'<sup>17</sup> (fig H.2.5).

Reinforcing this idea, he added that fake ruins should appear firm and stable, unlike real ones, in order to avoid 'the painful emotion of fear, instead of the pleasant emotion of beauty'.<sup>18</sup> His explanation was sustained by the eighteenth-century archaeological discovery of Pompeii and Herculaneum in Italy (fig H.2.6). This revived a manifest interest in ruins in relation to decay and death. Drawings and etchings by artists and architects, such as Giovanni Battista Piranesi, Charles-Louis Clérissseau and Robert Adam, circulated images of crumbling buildings invaded by ivies and mosses throughout Europe (figs H.2.3-4, 7).

As a result, this vogue provided an ideal metaphor for the decline of a society that could not cope with the wealth and luxury engendered by the rapid development of its own industry. In his essay 'Scenes from the Future' (1999), Christopher Woodward mentioned a passage from *Enquiry into the Causes of the Late Increase of Robbers* (1751) by Henry Fielding, who correlated London and Rome:

H.2.8

H.2.9

- H.2.8 Joseph M. Gandy, *View of the dome of Sir John Soane's museum, looking east* (1811).
- H.2.9 John Soane, extract from the 'Crude Hints towards a History of my House' (1812).

from virtuous Industry to Wealth; from Wealth to Luxury; from Luxury to an Impatience of Discipline and a Corruption of Morals; till by a total Degeneracy and loss of Virtue, being ground ripe for Destruction, [she] falls prey at last to some hardy Oppressor, and with the Loss of Liberty ... sinks into original Barbarism.<sup>19</sup>

On the other hand, Whately provided a historic reason for the supremacy of gothic ruins over classical ones. The eighteenth century saw the foundation of the British nation, uniting the countries of England, Wales and Scotland. In parallel, wars with France forced the Grand Tour to be replaced by excursions around the British Isles. The conjunction of these circumstances engendered an interest in local landscape and ruins, which were carefully documented along with their location and distinct history. Corroborating the idea, Anne Janowitz further explained in *England's Ruins* (1990) that English political authorities exploited those ruins as a common heritage to the various cultural groups to build the image of Britain, a country irrevocably linked to nature.<sup>20</sup> In consequence, historic value was attributed not only to ruins but also to their surrounding environment. Whately declared that gothic ruins were therefore apt to 'carry the imagination to something greater than is seen',<sup>21</sup> generating historic associations in the mind of the viewer

The fashion of inserting fake ruins in landscape composition had reached its limit by the end of the century as their associative potential was progressively overtaken by their formal features. This interest in gratuitous forms or aesthetics prompted the explosion of excessive, incongruous ruins which induced a general 'disaffection for allegorical and related imagery'<sup>22</sup> and ended up suffocating the trend by the nineteenth century.

## 2.2 John Soane and Ruins

From 1777 to 1780, John Soane made a Grand Tour in Italy after winning a scholarship at the Royal Academy. During his travels, he undertook archaeological studies which instigated his fascination for ruins. He also made the acquaintance of Piranesi, whose creative and imaginative vision had a great influence on Soane's later mode of representation, both in texts and in architectural drawings. Soane was always after the peculiar and the original in architecture and his obsession with ruins occurred in a period when the focus on those vestiges started to fade into oblivion. Back from Italy, he challenged conventional architectural approaches by combining, associating and articulating those meaningless remains together in an unprecedented manner, so as to generate a new metaphorical and poetic wholeness. Yet his eccentricity

was not without struggle. Soane led a bitter battle with the Royal Academy following his fourth lecture dating from January 1810, during which he criticized his contemporary peers for their tasteless, pompous buildings in 'utter want of appropriate character'.<sup>23</sup> The situation degraded to the point where Soane was described as an 'insane man'<sup>24</sup> by the sculptor John Charles Felix Rossi during his account of the Royal Academy Council meeting in April 1811. These conditions might have incited the District Surveyor William Kinnard to dismiss John Soane's façade scheme for Lincoln's Inn Field in 1812.<sup>25</sup>

### 2.2.1 Crude Hints towards a History of my House ...

Soane was deeply concerned with the posterity of his realizations and often wrote a complementary narrative script depicting his buildings in the manner of an archaeologist or detective portraying the excavation of an ancient ruin (fig H.2.8). For instance, during the demolition phase of the restoration undertaken at No. 13 Lincoln's Inn Fields, the existing house materials were auctioned off on site. The rhythm of buyers scraping their new acquisitions out of the building generated an ongoing process of demolition, revealing gradually the structure of a mysterious ruin.

Oh man, man, how short is thy foresight  
in less than half a Century  
in a few years  
before the founder was scarcely mouldered into dust  
no trace remains of the Artists who were to have inhabited the place  
from one generation to another  
And the building itself only presents a miserable picture of  
horrible dilapidation  
Oh could the dead but for a moment leave their quiet mansions  
could they but even look out of their Graves and see how posterity  
treated them and their Works what Hell could equal their Torments.<sup>26</sup>

In 'Crude Hints towards a History of my House' (1812), Soane took the part of an antiquary who envisioned this demolition site as a ruin scrutinized by visitors speculating on its origin and function. An assortment of unusual remaining elements triggered an imaginative interpretation of the ruin, transforming it into a Roman or Greek temple, a burial place, a monastery or a magician's lair. Besides, the claustrophobic staircase shaft was reminiscent of an eerie prison like Piranesi's Carceri; the basement concealed a series of macabre tombs and catacombs, and the carved blocks of the rear façade seemed to be parts of cinerary urns.

H.2.10

H.2.11

H.2.11

H.2.13

H.2.10     Joseph M. Gandy, *Views of the Bank of England's Rotunda in ruin* (1798).

H.2.11–12   Demolition of the Bank of England's Rotunda, *The Times* (1 May 1925).

H.2.13     Joseph M. Gandy, *A bird's eye view of the Bank of England* (1830).



Although starting off in a cheerful and optimistic spirit, *Crude Hints* quickly grew into a dreadful and personal reality. The ruins' excavation unveiled the distressing life of its creator who failed to achieve his filial ambitions and was tormented by a collective conspiracy. Indeed, the timing of *Crude Hints* corresponded to Soane's awakening to the aching fact that his works would not be taken over by his sons, as attested in an alternative ending written by Soane:

the man who founded this place fondly imagined that the children of his children would have inhabited the place for Ages ...

Oh! What a falling off do these ruins present.<sup>27</sup>

Furthermore, it was also during this period that Soane became involved in a long battle against the Royal Academy's censorship and later on against the District Surveyor's rejection of his façade scheme for Lincoln's Inn Fields. He claimed that the Council of the Academy, together with the corps of architects, plotted to persecute him. Therefore, *Crude Hints* could be read as a metaphoric tale for Soane, seen as a lonely solitary figure abandoned by his sons after the death of his wife. The manuscript itself turned into a sort of ruin, with the handwriting's degradation and the accumulation of erasures, stains, crossings-out of words and reframing of sentences that reflected the author's gradual depression (fig H.2.9). Ruins infiltrated the text, then, literally and allegorically at different levels; subject, structure and product of 'Crude Hints towards a History of my House' were all subordinated to ruins.

### 2.2.2 From representation of ruins to ruin of representations

Ruins were also perceptible in Soane's architectural drawings. In his tenth lecture at the Royal Academy (1815), he explained regarding artificial ruins that 'to produce pleasing sensations there must be an appearance of truth' and that 'they must recall to the mind the idea of real objects and not be considered as mere pictures'.<sup>28</sup> This could be best observed in details in the illustration of the Bank of England made by his draughtsman, Joseph Gandy, in 1798 (fig H.2.10). He painted the Rotunda not only as an intact structure but also as a ruin invaded by vegetation. The noise and the frenetic activities of the Stock Exchange being eradicated, the interior stood out as a hollow, silent, luminous, spacious and solid volume of bare masonry, evoking the Roman ruins visited earlier by Soane and Gandy. The form of representation was again irrefutably inspired by Piranesi's style with the dramatic perspective, the alarming obscurity, the men vandalizing the ruin and fragments lying in the foreground ...

Nevertheless, despite all the aggressions and the grim *mise-en-scène*, this view was encouraging and optimistic given that the ruin stood proudly throughout time and decay. Curiously, photographs taken during the demolition of Soane's Bank in 1925 struck by their strange resemblance to Gandy's drawing (figs H.2.11–12). In the picture published by *The Times* (1 May 1925), the men despoiling the Rotunda in Gandy's paintings were suddenly brought to life by those builders pulling down the structure ...

Another painting *A bird's-eye view of the Bank of England* (1830) was made by Gandy for the exhibition at the Royal Academy celebrating the completion of Soane's masterpiece (fig H.2.13). In technical terms, this drawing was an axonometric section, yet as Daniel Abramson declared:

In this image – a combination of plan, section and elevation – the totality of Soane's achievement is represented: interior and exterior, construction and decoration, substructure and superstructure, all publicly revealed like a model on a table top.<sup>29</sup>

Perfectly conscious of the powerful impact of ruins, Soane exploited this stratagem of a half-built or half-demolished construction, not merely to demonstrate his architectural abilities but foremost to give a description on the whole of his architecture, leaving thereby an indelible trace in the public memory.

## 3. From the twentieth century on

The twentieth century was not left indifferent to the concept of ruins and even introduced an evolution from fake ruins to anticipated ruins. The latter concept consisted in reframing modern constructions as if witnessed from a remote future. Indeed, anticipated ruins offered the viewer the opportunity to envisage his current position in the context of a wider historical continuum. For instance, the Nazi architect Albert Speer developed the 'Theory of Ruin Value' in 1934 to establish Third Reich architecture in Berlin. All edifices of symbolic significance were to be built using conventional masonry techniques instead of iron and reinforced concrete, since this method allowed their rapid dissolution into ruins (figs H.2.14–16). By doing so, the next generation of Germans could look back and revere in a very near future their own heroic history.<sup>30</sup>

This 'theory of the Ruin Value' probably derived from the notion of 'age-value' introduced by Alois Riegl in his essay 'On the Modern Cult of Monuments' (1903). The age-value referred purely to the age of the building that revealed the flowing of time. It accepted the

H.2.14

H.2.15

H.2.16

H.2.17

H.2.18

H.2.19

H.2.20

- H.2.14     Albert Speer, the *Great Dome* model (1937), Berlin.
- H.2.15     Hans Dustmann, *Langemarckhalle* (1941), Berlin.
- H.2.16     Ibid., detail of the colonnade.

- H.2.17     Robert Smithson, *Map of the Monuments of Passaic* (1967).
- H.2.18     Robert Smithson, *Monuments of Passaic; the Bridge Monument*.
- H.2.19     Ibid., *Monument with Pontoons*.
- H.2.20     Ibid., *The Fountain Monument*.

ongoing decay of buildings up to their total dissolution, acting thereby as a metaphor for the human condition. The age-value moved and fascinated the user/viewer: 'these monuments are nothing more than indispensable catalysts which trigger in the beholder the sense of life cycle, of the emergence of the particular from the general and its gradual but inevitable dissolution back into the general'.<sup>31</sup> Its significance took over the historic or symbolic value of the building: 'age-value appreciated the past for itself, while historical value singles out one moment in the developmental continuum of the past and places it before our eyes as if it belonged to the present'.<sup>32</sup> Speer sought to merge the age-value with the historical value: the inevitable dissolution was therefore ignored to suit the emergency of the Third Reich architecture. What was currently built had to glorify the immediate past, the historical value, but also pretend to be established as far back as one could remember, the age-value.

In the 1970s, a shift was made from anticipated ruins to 'ruins in reverse' with the work of the landscape artist Robert Smithson. In his writing *A Tour of the Monuments of Passaic, New Jersey* (1967), he gazed at the temporal and pictorial layers of New Jersey landscape and described the suburbs of Passaic (figs H.2.17–20):

That zero panorama seemed to contain ruins in reverse, that is – all the new construction that would eventually be built. This is the opposite of the 'romantic ruin' because the buildings don't fall into ruin after they are built but rather rise into ruin before they are built.<sup>33</sup>

This expression 'ruins in reverse' and its concept were borrowed from the novelist Vladimir Nabokov who claimed that 'the future is but the obsolete in reverse'.<sup>34</sup> In fact, for Smithson ruins were not assimilated to the memory of the past but to the present as a projection of the future. Ruins served as an instrument to engender the forthcoming building. In this respect, they became a reality in their own right and embodied simultaneously the reality of the future edifice: the construction sites.

Indeed, by gathering all the disparate fragments of a construction site, it was possible to evoke the whole of the structure. Those sites remained faithful to the experience of ruins and/or to the ruin of experience.

As explained above, early building processes in Europe extended over several years. People used their imagination to patiently sketch over and over their prospect of future living as the building slowly grew. The destruction of an edifice took even longer: abandoned and left to decay, its remains were slowly invaded by nature before turning into an

integral part of a landscape. In contrast, the oriental building process depended on climatic and topographic conditions. Natural cataclysms like monsoons and earthquakes, as well as ground irregularities and the inappropriate qualities of stones as construction materials, required a Sisyphean state of mind from the oriental constructor. Buildings were thus conceived as temporary, made out of perishable elements, mainly wood and rice or mulberry papers. As a result, construction and destruction followed each other, installing a cycle in the lifetime of the structure. Ruins hardly existed in those regions.<sup>35</sup>

Nowadays, a building's demolition does not last more than a few days (figs H.2.21–22) while prefabrication and standardized building methods hasten the construction time: the whole process of construction-destruction is accelerated. Moreover, confronted by the lack of space and its costly price, a growing demography, territorial fragmentation and multiple environmental issues, architecture and urbanism develop strategies based on recycling, reappropriation and permanent transformations.<sup>36</sup> This situation, combined with the standards of speed and efficiency characteristic of the current consumer society, means that ruins, as we know them, slowly disappear. In fact, their architectural definition needs to be revised and completed to suit the lifestyle of our specific era.

#### 4. Ruins and the oriental void

'In ruins, even of the most regular edifices, the lines are so softened by decay or interrupted by demolition; the stiffness of design is so relieved by the accidental intrusions of springing shrubs and pendant weeds.'<sup>37</sup>

This eighteenth-century testimony explains that the charm of ruins relies on their substantial incompleteness and the softness rendered by overwhelming nature. The incompleteness and blurriness of ruins echo the blank gaps and softness of brushstrokes in Chinese landscape paintings. They awaken the viewer's imagination and provide him with the opportunity to appropriate the ruins creatively, by associating them with his own visions and imbuing them with new meanings.

When a building grows into ruin, it undergoes a transformation through time and acquires a signification that overwhelms the purpose of the building's original design. A shift occurs from a useful and functional construction to a useless structure, void of meaning, function and occupant. As Smithson claimed, 'the space is the remains, or corpse, of time'.<sup>38</sup> The building's disintegration entails the disappearance of an architectural room opposed to the emergence of a silent empty

H.2.21

H.2.22

H.2.21–22 The rapid demolition process of buildings.

space, housing the memories of the past. The deteriorating state of ruins is no longer dictated by users but by time: fading colours, flaking paint, peeling wallpaper, rusting metal, crumbling masonry, invading vegetation ... Walking through those traces is to some extent witnessing and experiencing the original construction. Hence, ruins embody the phenomenal void while introducing the returning movement advocated by the void and full philosophy.

It is to be noticed that ruins are often the remaining part of the building structure rather than its ornament, making possible the reading of the quintessence of the building and its construction strategy. In this perspective, ruins can be compared to the *Li* of the void and the full, the internal rules or guidelines of all things and beings.

Like moss, ruins are also ambiguous in their evocation as they can be interpreted from different angles, in distinct manners. On the one hand, ruins as remains of an edifice embody not only a wrecked promise, a longing for the fullness which has vanished and is irrevocably lost, but also the transitoriness of all human realizations, the opposite to perennial nature. Those ruins drown the viewer in an emotional state of melancholy, resignation and fate, opening a path to reflection and introspection. Alternatively, ruins can be related to the future prospective when perceived as building in progress or integrated into a newly composed whole. In consequence, memories are emancipated from the past while renewed symbolic and poetic connotations are reinstated in the edifice. Those ruins reinvigorate the desire to fulfil a once-broken promise by superimposing and testing the past with the present. In both cases, ruins play the part of a relay between history and current, oblivion and reminiscence, persistence and transience. As the void and the full, they constitute the nodal point made of the virtual and of the becoming, allowing a fluid transition of situations.

Besides, ruins are comparable to memorials or monuments to a certain extent. They engender memories of what is missing or what it embodied, albeit unintentionally. As debated by Adrian Forty in his introduction to the book *The Art of Forgetting* (1999), a monument not only implies the memory of what it epitomizes, but ultimately initiates its forgetting. In fact, the physical deterioration of monuments echoes the mental decay of their emblematic value, conforming to the process of forgetting.<sup>39</sup> Thus, forgetting and remembering wrestle within ruins. In this respect, ruins become a void where the alternation of opposite Yin and Yang poles is made possible.

At last, there is the absence of boundaries in ruins: in and out intermingle into a fluid continuum. When used in landscape, the emptied carcass suggests the existence of an interior whose enclosure is no longer physical or visible, whereas used indoors, as in John Soane's Monk's Yard (1824) at Lincoln's Inn Fields (which was demolished and rebuilt in various phases from 1792 to 1824), it brings in a fragment of the outdoor sedimentation process. In this respect, the lack of definite borders reveals the reversibility/reciprocity aspect of the void in ruins, whereby their spatial and temporal qualities can be interchanged. Indeed, the passage of time is expressed through the ruins' layering of various architectural styles whereas the crumbling aspect of ruins exposes the effect of time.

## 5. Conclusion

In the light of this chapter, the ambiguous identity and the versatility of ruins are precisely what make them so appropriate for playful associations. Ruins become thereby an ideal conceptual hyphen that successively transforms the viewer's thoughts into new, other ones. In this respect, ruins act as a mirror that reflects the viewer's cultural personality. Ruins can also be considered a material hyphen when they come to embody and express their owner's idiosyncratic visions, as in eighteenth-century fake ruins. This study of ruins has revealed the significant contribution of the picturesque movement to perceiving ruins as a positive asset. In particular, picturesque landscape painting and gardening cultivated the art of ruins with great affection. They are therefore further investigated in the following chapter.



# 3

## The English Picturesque Landscape Garden

Instead of reporting all the debates on aesthetic issues concerning the Beautiful, the Sublime and the Picturesque, this thesis focuses on picturesque visions of landscape. To this end, research is concentrated on landscape painting and the art of gardening, leaving aside the literary and poetic aspects despite their contribution to the picturesque movement. The chapter closes by examining the Chinese influence on picturesque landscape gardens.

### 1. Pittoresco

The English word 'picturesque' derived from the Italian *pittoresco*, meaning 'after the manner of painters'.<sup>1</sup> More precisely, John Dixon Hunt explained in *The Picturesque Garden in Europe* (2002) that the word referred to 'a certain method of laying on paint; with broad strokes, not necessarily legible in close up, and even scratchy surfaces, [which] drew attention to the actual medium'.<sup>2</sup> Besides, *pittoresco* also suggested 'compositional strategies, where human figures are arranged irregularly and picturesquely as if the technique of representation was as crucial as the subject matter'.<sup>3</sup> Payne Knight considered the sixteenth-century Venetian master painter Giorgione as the style originator, but declared that another Venetian, Tiziano Vecellio, known as Titian, refined those painting techniques to their best.<sup>4</sup> Titian modified the conventional way of painting landscapes by depicting nature not as he rationally knew it but as he truly saw it (fig H.3.1).

Indeed, the mind knows that a tree is composed of innumerable leaves, several branches and a trunk whose bark can be hard, flaky, etc. But when observed in its surrounding nature, that tree appears as multiple coloured stains whose surface presents a pattern varying according to the play of light and shadow. Unlike his contemporaries, who used a precise and descriptive painting technique, Titian preferred rendering landscape as a quick sketch that blurred details into masses of colour and emphasized texture and light. This method generated an evocative landscape that conveyed a light, joyful and immediate atmosphere. *Pittoresco* subsequently described the landscapes depicted in those paintings. By extension, scenes observed in nature that called to mind those painted landscapes were also described as *pittoresco*.<sup>5</sup>

### 2. Ideal landscape painting in southern Europe

During the Renaissance, landscape in paintings was relegated to the background of portraits, as a supporting role in the canvas composition.

H.3.1

H.3.2

H.3.3

- H.3.1 Titian, *Bacchanal of the Andrians* (1523–24).
- H.3.2 Claude Lorrain, *Landscape with the marriage of Isaak and Rebekka* (1648).
- H.3.3 Salvator Rosa, *River landscape with Apollo and the Cumean Sibyl* (1655).



The historic landscape usually described a specific mythical, historical or religious event in a natural setting, where the main character's narrative was the focus of the painting.

By the mid seventeenth century, the Grand Tour along with the apparition of theories on aesthetics and nature fomented a keen interest in natural landscape.<sup>6</sup> In Italy, artists inspired by Titian's innovative method went a step further by painting nature not as it actually is but as it could be ideally: the ideal landscape. As Joshua Reynolds stated, painters should 'correct Nature by herself, her imperfect state by her more perfect'.<sup>7</sup> Often inspired by classical poetry, these landscapes were carefully composed, incorporating ruins or features that suggested the landscape of classical Greece or Rome. In this context, Claude Lorrain depicted a quiet and idyllic nature (fig H.3.2) while Salvator Rosa emphasized its wild and violent side (fig H.3.3). By the eighteenth century, these landscapes were categorized in relation to a treatise of aesthetics largely based on Edmund Burke's ideas found in *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1757). Lorrain's pleasant landscapes were labelled as beautiful and Rosa's dramatic landscapes as sublime. Landscapes were no longer merely 'emblematic' but also 'expressive'.<sup>8</sup> Those paintings still presented mythical or human figures in the foreground and received titles in relation to historic or religious events. However, the background landscape occupied hereafter most of the canvas, making the narrative look like an annotation to the landscape.

### 3. Picturesque landscape garden

#### 3.1 Early picturesque garden

By the end of the seventeenth century, the gardens of Versailles were considered the most distinctive reference in gardening. On the one hand, they displayed a large horticultural variety planted according to clear axes and complex geometric patterns, and on the other hand, they incorporated fine water features, and symbolic architectural and artistic components. As a result, they not only conveyed the formal image of a powerful and eminent monarch but also provided a lavish background for social events and entertainments.<sup>9</sup>

By the beginning of the eighteenth century, England reacted against the 'French authority in arts and in politics. It was an endorsement of liberty and tolerance against tyranny and oppression; democracy against autocracy'.<sup>10</sup> This denunciation was greatly motivated on the one hand

by the emergence of a new identity, Britain, envisioned as the 'new Rome',<sup>11</sup> and on the other hand by British empiricism which claimed on the whole that knowledge and ideas were not an innate or a priori system but instead derived from sensorial experience.<sup>12</sup> The latter approach brought a refreshing change from the French Cartesian thinking that considered bodily perception as unreliable and advocated an a priori system of knowledge based on deductive reasoning. In practice, the English garden progressively departed from the French geometric pattern by gradually introducing wild, untamed local nature in its composition.

#### 3.1.1 From historic landscape painting to early picturesque garden

The eighteenth century saw a proliferation of picturesque aesthetic theories that principally regulated the perception of nature as if it were a well-composed landscape painting. As stated by Christopher Hussey in *The Picturesque* (1927):

At moments, the relation of all the arts to one another, through the pictorial appreciation of nature, was so close that poetry, painting, gardening, architecture, and the art of travel may be said to have been fused into the single art of Landscape. The combination might be called the picturesque.<sup>13</sup>

In this respect, landscape designers were encouraged to borrow techniques and principles from landscape painting and to compose nature in the image of paintings. Earlier advocates like Alexander Pope declared that 'All gardening is landscape-painting. Just like a landscape hung up'.<sup>14</sup> At the beginning of the century, those remarks were mainly made in reference to historic paintings, where landscape acted as the background for human or mythological narratives.<sup>15</sup> As a corollary, designing a garden was akin to designing a theatrical setting, with antique Roman pavilions positioned in an English landscape for visitors to enjoy both as viewers and as actors.<sup>16</sup> The ensuing pictorial scenes provided diverse atmospheres suited for various types of social encounter and gathering happening in the garden. Their transitions were carefully orchestrated by the designer, in quiet and smooth or dramatic and surprising effects. This correlation between garden and social activity could be perceived as an extension of the eighteenth-century concern for appropriate behaviour and etiquette in society.<sup>17</sup>

In practice, the stroller's gaze was constantly solicited by framed views centred on a focal point in the landscape or by perspectives created

H.3.4

H.3.5

- H.3.4 William Kent, *Flower garden at Chiswick House* (1730).
- H.3.5 William Kent, *Stowe landscape gardens, the Temple of Ancient Virtue* (1734), Buckinghamshire.

following the pictorial division of fore-middle-background. The ultimate purpose of the composition was to arouse the stroller's imagination during the promenade.<sup>18</sup> Thus the pictorial influence was mostly introduced during the design process of the landscape garden in the early part of the eighteenth century.

### 3.1.2 William Kent and Stowe

According to Kames, William Kent was a pioneer in composing gardens with objects 'as they ought to be upon a canvas in a painting'.<sup>19</sup> In order to enhance the perspective effect, Kent replaced the usual garden boundary walls with sunken ditches and ha-has, opening the viewer's gaze onto the endless natural scenery. This method also blurred the garden with its immediate surroundings, a manner of 'call[ing] in the country'<sup>20</sup> within the garden according to Pope. In consequence, the garden presented a contextual frame through which the viewer could awake, to appreciate and celebrate the beauty of the local English landscape.

In the 1730s, Kent designed the *Elysian Fields* in the eastern part of Stowe landscape gardens in Buckinghamshire. He encouraged movement in the garden through evolving topographies, winding paths and the addition of the river Alder that altogether provided exciting walks. However, those gardens were not designed for the sole pleasure of their visitors but also for reflecting their owner, Lord Cobham's political and moral beliefs.<sup>21</sup> This was achieved by inserting fake emblematic pavilions and ruins in the gardens. Kent used them to set distinctive atmospheres throughout the garden (fig H.3.4). For instance, the serene and elegant Temple of Ancient Virtue (fig H.3.5) built to the image of the Temple of Vesta at Tivoli celebrated four renowned Greek personalities. In contrast, the Temple of Modern Virtue was intentionally built as a desolate, fake ruin housing a headless statue of Sir Robert Walpole.<sup>22</sup> These classical features built in English settings were progressively replaced with English native, gothic imagery, revealing a transfer from Italian taste towards the English sensibility.<sup>23</sup>

## 3.2 Transition from early to late picturesque garden

Throughout the seventeenth and eighteenth centuries, the British Empire engaged in diverse wars abroad in order to ensure its economic expansion and political authority. Simultaneously, severe repressions were set within the country to handle a steady growth in crime and prostitution, while corruption spread among the bourgeoisie and leading social

classes. As a result, public opinion grew weary of pedantic, patronizing emblems. It embraced instead the rising British empiricist ideas promoting the sensorial perception of the individual as a reliable way to reach general knowledge and the supremacy of the individual's sensible experience over elaborate aesthetic theories.<sup>24</sup> By the mid eighteenth century, John Locke's empiricism went on to affect other fields such as the physical sciences through Isaac Newton's *Opticks* (1704) and aesthetic debates through, for instance, Joseph Addison's 'Pleasures of the Imagination' (1712) or Kames's *Elements of Criticism* (1762).

### 3.2.1 From emblematic to expressive garden

In this context, early landscape gardens' theatrical setting and iconographic features were replaced by a more personal approach to landscape composition that reflected the designer's take on nature using his imagination and sensibilities: expressive gardens.<sup>25</sup> Emphasis was put upon emotions and sensibilities that offered intellectual freedom; the mind was to be free from socio-political conventions, making 'its associations more flexible, more vague even, certainly more private'.<sup>26</sup> Moreover, early picturesque gardens engaged the viewer's common knowledge and formal thinking to read the hidden meanings behind emblems scattered in the garden. By contrast, late picturesque landscape gardens were grasped in a more spontaneous and instinctive manner as suggested by Whately in his *Observations on Modern Gardening* (1770) when criticizing the early picturesque garden's emblematic components:

All these devices are rather emblematical than expressive; they may be ingenious contrivances, and recall absent ideas to the recollection; but they make no immediate impression, for they must be examined, compared, perhaps explained, before the whole design of them can be understood; ... the allusion should not be principle; it should seem to have been suggested by the scene: a transitory image, which irresistibly occurred; not sought for, not laboured; and have the force of a metaphor, free from the detail of an allegory.<sup>27</sup>

Knight corroborated this shift from emblematic to expressive gardens when he argued about the pictorial influence on early landscape gardening: 'The point is not to make a landscape to look like a painting but that the observer should think like a painter, mentally constructing the landscape images and responding to them as if they were painting.'<sup>28</sup> In this respect, late picturesque gardens were appreciated

H.3.6

H.3.7

H.3.8–9

H.3.6 Lancelot Capability Brown, *Stowe landscape gardens, the Grecian Valley* (1715–45), Buckinghamshire.

H.3.7 William Gilpin, the general idea of Keswick lake from the manuscript of his *Lakes Tour Notebook* (1772).

H.3.8 Thomas Hearne, illustrations for Richard Payne Knight's *The Landscape: a Didactic Poem* (1794), a landscape in the style of Capability Brown.

H.3.9 Ibid., the same landscape in the picturesque style advocated by Knight.

in multiple manners, following the personal taste and artistic or literary knowledge of the viewer.<sup>29</sup> It was a less complex but more intuitive approach to picturesque gardens.

### 3.2.2 Lancelot Capability Brown and Stowe

The transition from early to late picturesque gardens was best illustrated by Lancelot Capability Brown and his Grecian Valley begun around 1746 in Stowe landscape gardens. All artificial components, such as sculptures or pavilions, and decorative elements, such as flowerbeds and terraces, were removed from the garden. They were replaced by smooth heaps of earth levelled into hills and valleys, a serpentine river<sup>30</sup> and irregular clumps of trees that emphasized the form and potential of the local topography and nature (fig H.3.6).<sup>31</sup> As a corollary, Brown purged the garden of all historic or politic connotations, setting the viewer's mind free to appreciate the garden at his own pace. However, the elimination of this emblematic layer also denied the pleasure of association offered by early picturesque garden.<sup>32</sup> In consequence, Brown's 'natural' design was criticized by his peers and successors, such as Sir William Chambers, Humphry Repton, Knight and Price, as dull and plain, generating 'gardens which differ little from common fields'.<sup>33</sup>

## 3.3 Late picturesque garden

By the end of the eighteenth century, extensive literature about the picturesque, combined with the widespread fashion of landscape painting and gardening, made the picturesque accessible to a wider audience than merely the elitist upper class.

### 3.3.1 William Gilpin and the English countryside

As previously stated, the Grand Tour to Italy was made difficult by ongoing wars with France and other European countries by the second half of the eighteenth century. As a result, it was eventually replaced by trips to destinations in the British Isles. The Reverend William Gilpin promoted his affection for the richness of indigenous vegetation, the variety of English topographies and the overall wilderness of untamed nature which he encountered during his many visits to different parts of the English countryside (fig H.3.7). He therefore encouraged the use of local and natural materials as well as the adaptation of the garden to the natural topography of the place,<sup>34</sup> keeping accidents such as bumps and slopes in the final garden composition. In this way, the garden

design preserved or enhanced the natural charm of a given site. He also observed in *Remarks on Forest Scenery* (1791):

A mountainous country rarely sinks immediately into a level one; the swellings and heavings of the earth, grow gradually less. Thus as the house is connected with the country through the medium of the park; the park should partake of the neatness of the one, and of the wildness of the other.<sup>35</sup>

As a corollary, this view of the garden advocated the insertion of an intermediary area in-between the contained order of the house and the untamed surrounding environment. It differed from the approach adopted by Brown who 'swept the lawn straight up to the walls of the house'.<sup>36</sup>

### 3.3.2 Knight, Price and the influence of ideal landscape paintings

In reaction to Brownian bland and ordinary landscape gardens, Knight and Price turned to the ideal landscape paintings. Those paintings moved away from historical landscape, burdened with narrative and symbolic meanings, to concentrate on nature itself. According to Knight, they presented a wide range of colours and rough textures with abrupt plays of light and shadows that could be reciprocated in garden practice.<sup>37</sup> Experiments with the texture, colour, form of diverse garden materials and native plants could yield equally appealing plays of chiaroscuro. Moreover, if landscape painting could inform the visual appearance of landscape gardens, Knight was careful to advise works by painters who enjoyed the artistic freedom to compose a landscape which triggered sensual or intellectual reactions from the viewer.<sup>38</sup> Transposed to landscape gardens, designs which merely mimicked nature depicted in landscape painting were considered inferior to those seeking to arouse emotions in the viewer. As a result, formal or theatrical compositions of earlier picturesque gardens were replaced by a visual density and overall busyness that aimed at continuously engaging the mind of the stroller, as confirmed by Uvedale Price who encouraged the 'disposition of objects, which, by partial and uncertain concealment, excites and nourishes curiosity'<sup>39</sup> (figs H.3.8–9). For instance, pavilions and ruins half-hidden by vegetation contributed to the game of association in the viewer's mind.

H.3.10–11

H.3.12

H.3.13

H.3.10–11 Humphry Repton, view of the Tatton Park before and after Repton's landscaping (1792), Cheshire.  
H.3.12–13 Humphry Repton, views of Hooton Park before and after Repton's landscaping (1802), Cheshire.

### 3.3.3 Repton and the living landscape

Although he acknowledged the necessity of a 'reassessment of Brownian principles',<sup>40</sup> Repton didn't wholly rely on the pictorial approach of late picturesque gardens like Knight and Price as he realized the gap between pictorial theories and the practice of landscape design (figs H.3.10–11). Indeed, gardens were subject to constant changes in light and weather, while the viewer's perspective incessantly evolved during a promenade, unlike a frozen moment depicted by paintings.

Besides, unlike Knight or Price who were their own landscape designers, Repton had to create 'living landscapes', which his clients would 'live in and use as well as enjoy'.<sup>41</sup> In consequence, he adapted some of the pictorial dictates to the practical requirements of a lived-in landscape. For instance, the usual scenic division of fore-middle-background of the garden was replaced by a focus on the foreground which was easier to handle. In practice, this was achieved by reinserting mundane objects such as terraces, flowerbeds and conservatories into the picturesque landscape composition. By doing so, the formal garden was not only re-established as a useful outdoor extension of the house,<sup>42</sup> but also served as a smooth transition between the house and the untamed surrounding nature, as promoted by Gilpin (figs H.3.12–13). This enabled Repton to bring back the emblematic layer in the late picturesque landscape garden and reconcile thereby the Brownian naturalistic landscape with the pictorial dictates mentioned by Knight and Price.

## 4. Chinese influence on English picturesque landscapes

Chambers remedied the lack of picturesque interest in Brownian landscape by introducing Orientalism in gardening.<sup>43</sup> Although his work *A Dissertation on Oriental Gardening* (1772) was not based on accurate descriptions or principles, Chambers managed to quickly set a trend for all things exotic in the late picturesque garden. This paragraph will discuss the particular case of the Chinese influence on English picturesque landscape gardens.

Despite the anachronistic timing, correlations appeared between the Chinese literati tradition, established during the tenth-century Song dynasty, and the eighteenth-century picturesque, regarding their approach to landscape.<sup>44</sup> This coincidence between East and West was probably not entirely due to a direct Chinese influence on Europe. Chinese gardens seemed to have surreptitiously affected the picturesque landscape gardens, as explained by Eleanor von Erdberg in *Chinese*

*Influence on European Garden Structures* (1985). The fundamental Chinese garden manual *Yuan Yeh* or *The Craft of Gardens* (ca. 1631), compiled by Ji Cheng during the Ming dynasty, remained unknown in Europe at the time.<sup>45</sup> Nevertheless, Chinese gardens were first mentioned in England by Sir William Temple in his essay *Upon the Gardens of Epicurus, or, of gardening in the year 1685* (1692). Albeit his reference was vague and his descriptions too succinct, Temple presented them as being chiefly characterized by their irregularity and lack of order which aimed at replicating nature, 'where the beauty shall be great, and strike the eye, but without any order or disposition of parts that shall be commonly or easily observed'.<sup>46</sup> He declared that the Chinese used the word *sharawadgi* to express landscape presenting those qualities. The etymology of this particular term has since been debated by many theorists from both cultures who invariably attributed its origin to Chinese or Japanese or to Temple's own invention.<sup>47</sup>

Regardless, *sharawadgi* was thought to be Chinese in the seventeenth century and emerged as an umbrella word that encompassed all the peculiar features of the East, whether Chinese, Japanese or other. The term and its associated signification became known from early picturesque advocates such as Addison through Temple's personal secretary Jonathan Swift.<sup>48</sup> In this context, Addison declared in 'Pleasures of the Imagination', published in *The Spectator*, No. 414 (1712), how Chinese gardens were particularly apt to stimulate the viewer's imagination by their unruly rendering of landscape, which emulated its natural features rather than forcing them to endorse dry geometric shapes and plans as in French or Italian gardens. Furthermore, reliable illustrations of Chinese gardens were available thanks to Father Matteo Ripa, an Italian Jesuit who introduced the copper-engraving technique in China during the reign of the emperor Kangxi. In 1724, he offered to King George I of England a copy of his thirty-six views of the Imperial Summer Palace's gardens in Jehol that were originally printed in 1714 for the emperor Kangxi (fig H.3.14).<sup>49</sup>

In consequence, Chinese gardens were celebrated in eighteenth-century England, as attested by Owen Cambridge in *The World*, No. 118 (1756): 'whatever may have been reported, whether truly or falsely, of the Chinese garden, it is certain that we are the first of the Europeans who have founded their taste'.<sup>50</sup> This considerable phenomenon compelled architect Isaac Ware to acknowledge in *A Complete Body of Architecture* (1768) the Chinese influence on English landscape gardens.<sup>51</sup>

H.3.14

H.3.15

- H.3.14 Matteo Ripa, *Morning Glow on the Western Ridge* (1714).
- H.3.15 Extract from a copy of the *Yuan Ming Yuan si shi jing tu yong*, *Illustrated Odes to the Forty Scenes of the Garden of Perfect Brightness*, dated from 1745 and commissioned by the emperor Qianlong.



By the mid eighteenth century, other European countries such as France, Italy and Germany had coined the term Anglo-Chinese 'to denote the application of the different Chinese suggestions as understood by English landscape designers'.<sup>52</sup> This amalgamation was reinforced in 1743 by a letter from Father Attiret, a French Jesuit working as a painter in the court of the emperor Qianlong. Translated into English in 1752, the letter became the first account of a Chinese garden genuinely experienced by its author. The intricate beauty of the imperial gardens of *Yuan Ming Yuan* or the Garden of Perfect Brightness (1709–1860) was reported in detail (fig H.3.15):<sup>53</sup> the various types of atmosphere established in the gardens, the playful features of natural components such as water found in its multiple forms, the delightful pavilions built for lively social gatherings or for solitary contemplation, etc. Those descriptions were mostly welcomed by the English as they sustained the main directives of the picturesque movement instigated by 1730.

## 5. The picturesque landscape garden and the oriental void

In eighteenth-century England, aesthetic theories relying on British empiricist ideas amid an unstable socio-political context engendered a new artistic situation where nature came to be appreciated in its own right. The legacy from Italian landscape painters combined with the celebration of indigenous plants and local topographies gave way to the premises for English picturesque landscape gardens. By the end of the century, those gardens' composition and pictorial qualities were to arouse emotions by continuously titillating the mind and imagination of the visitor.

In fact, the constant visual and intellectual solicitations constitute the key hyphen between the picturesque landscape garden and the oriental void. Indeed, when the visitor uses his mind and imagination to make a free and instinctive interpretation of the scenery before him, an interiorization process occurs. He associates the garden with other familiar topics or with a particular reminiscence in his accumulated memory, which then modifies or mutates the original landscape into an-other. This new landscape inside the mind of the visitor is then projected onto the existing landscape, which in turn can trigger further associations. This endless interaction between the viewer's mind and the landscape garden reflects the reciprocity process of the oriental void. More, by engaging his mind and imagination, the visitor participates and merges in the wholeness of the picturesque landscape garden, where past, present and future co-exist in a fluid spatial continuum. He attains the ultimate experience, the plenitude.

## 6. Conclusion

Early picturesque gardens were not only a succession of pictorial scenes where the viewer's attention was grasped through symbolic fake ruins, framed views and perspectives. They also channelled and embodied their landowner's political positions, moral ethics and vision of the world. Following the eighteenth-century socio-political context in England, late picturesque gardens reduced the prevalence of emblematic images in favour of expressive compositions that delighted the sensorial experience of the individual. Influenced by the ideal landscape painting and by the wilderness of the native countryside, these gardens enhanced the natural character of the place by accentuating its rich variety of topographies and vegetation, overall texture and plays of light/shadow. This generated a visual density or busyness that engaged the viewer's imagination and emotions. In fact, picturesque gardens reflected a whole new approach to landscape thanks to aesthetic philosophies and ideas developed in regard to nature during the seventeenth and eighteenth centuries.<sup>54</sup>

The picturesque landscape garden also developed during a period of intense cultural exchange between East and West. Albeit Chinese influence on English picturesque gardens was not always recognized, it undeniably captivated European culture. 'Among all the gardens which the other parts of the world might possess, in later times none have received the attention which the Chinese garden has – or what is charmingly enough represented under that name. It has become not only an object of admiration but also of imitation.'<sup>55</sup> In the wake of this quote, the next chapter will therefore discuss the dictates of Chinese gardens, which appear closely related to Chinese landscape painting and poetry.



# 4

## The Chinese Garden

Chinese natural landscapes offered a rich variety of topographies ranging from high mountains and vast plains to fertile valleys and forests. They also carried a symbolic value as the hyphen uniting man with Heaven and Earth in the Taoist perception of the universe.<sup>1</sup> The humbled man understood that his happiness depended on his ability to live in harmony with nature. In this context, Chinese gardens mainly drew their directives from Taoism and the art of landscape painting since those already established an insightful approach to nature. This chapter will therefore study their influence on the art of gardening in China.

### 1. Confucian house and Taoist garden

Chinese religious beliefs hold the key concepts to Chinese traditional gardens. In China, Confucianism and Taoism developed in parallel thanks to their complementarities: the Confucian severity in social and political fields was balanced by the Taoist flexibility in private life. In this perspective, Chinese accepted and applied these religions in parallel, as could be observed in a Chinese traditional habitat. While the house layout respected the Confucian rules that regulated human relations, the garden followed Taoist precepts of man being in unison with nature and the universe.<sup>2</sup>

In this context, the Chinese traditional house was sited following the strict city grid and offered a clear and geometric layout that defined the social hierarchy within the household as well as the relationship between its host and visitors. According to Edmund Leach, this was then counterbalanced by the garden's design which presented a greater sense of freedom and imagination through its sinuous lines, contrasting with the straight lines of the house and the city grid.<sup>3</sup> This sinuosity embodied the spiritual communion of man with nature and transformed the garden into a metaphor for the cosmic relation of man with the universe. Consequently, surrounding walls delimited the garden in order to disrupt the urban grid, noise and routine of man's daily life and to focus the viewer's attention on peace and nature reigning inside the walls.<sup>4</sup> Finally, the garden served as background to many artistic and socio-political happenings, undeniably linking the garden to the evolution of Chinese civilization.<sup>5</sup>

### 2. Literati gardens and the *Yuan Yeh*

By the end of the third century, Taoism had become more popular owing to corruption within the Han imperial court, severe political repression and barbarous invasions from the north. This conjuncture shook the Chinese

H.4.1

H.4.1 Ta Kuan Yuan, *A Garden of Total Vision* (1930). An imaginary reconstruction of the garden in the Chinese novel *The Story of the Stone* or *Dream of the Red Chamber* by Cao Xuequin (ca. 1750).

trust in Confucian morals advocated by the government. Taoism thus provided a much-needed haven in which to overcome apprehensions and doubts by looking for one's inner resonance with the universe.

This period corresponded with the emergence of private gardens:<sup>6</sup> the gardens of imperial administrators and the gardens of aristocrats and newly rich merchants. Influenced by the Confucian rules by which their owners lived, the professionals' gardens were kept fairly simple and modest. By contrast, the literati's gardens were more opulent, demonstrative and emulative of royal parks. They were often said to be built and not planted because they appeared misshapen, complex, with a profusion of buildings and strange rocks piled up in tight spaces (fig H.4.1).<sup>7</sup> Indeed, gardens were composed of an ensemble of small, irregular, enclosed courtyards, containing pavilions and libraries alternating with rockeries and lakes. This effect was completed by the absence of a lawn, as grass in China was associated with the open land subject to barbarous invasions. It was therefore replaced by intricate patterned pavements, with rocky patches left here and there. The overall density and busyness of the garden gave the impression of a chaotic and uncontrolled proliferation of nature. This effect was in fact the result of a garden composition and principles that relied on the Taoist approach to nature as well as on dictates regulating the *Sanjue*.<sup>8</sup>

The art of gardening reached its pinnacle during the Ming dynasty (1368–1644). It was also during this period that the *Yuan Yeh* or *The Craft of Gardens* (ca. 1631) was written by the celebrated garden designer Ji Cheng. Mostly infused with Taoist philosophy, the *Yuan Yeh* was the first recorded garden manual in China. It served as fundamental reference in Chinese gardening until the disappearance of literati gardens in the Republican period. In echo of the elusive teaching method found in Lao-Tzu's *Tao Te Ching*, the *Yuan Yeh* deliberately combined practical and vague directives that were purposely ambiguous at times. Straightforward descriptions of garden components were also replaced by suggestions on mental predispositions and feelings necessary to design a landscape. In this way, the *Yuan Yeh* forced the garden builder to freely interpret its directives rather than simply apply them in practice.<sup>9</sup>

### 3. Taoist influence

#### 3.1 Quintessence and vital breath

The equivocal quality of the *Yuan Yeh* could be illustrated with the Taoist concept of *Li*, which encouraged the gardener to grasp the *Li* or essential guidelines found in nature and reflect them in his landscape composition to ensure its successful coherence. The *Yuan Yeh* proposed to actually achieve this by carefully selecting the garden components:

Try to make your mountains resemble real mountains. Follow Nature's plan to a certain extent, but do not forget that it is to be executed by human hands. Select the peculiar and seize upon what is good. Those who have the right interest will understand the matter.<sup>10</sup>

This passage indicated that the gardener was to single out a tree that encompassed and highlighted the characteristics of all other trees of the same species instead of selecting the most beautiful one. By doing so, all components of the garden expressed the quintessence of nature. In this respect, the garden was not just a superficial copy of nature but a deeper interpretation of it.

As stated in previous chapters, the Tao epitomized the process of becoming, where all things were in fluid continuity with others through endless combination, dissolution without repetition. The Tao revealed thereby the oneness of the universe. Transposed to gardening, the Tao could be experienced intuitively and immediately in the cycle of life and death, with the blossoming and fading of flowers. More evasive but essential was the application of the principle of *wu-wei*, or non-action.<sup>11</sup> *Wu-wei* was not a passive way but rather an effortless action or a natural action that related to the art of gardening on two levels.<sup>12</sup> On the one hand, the gardener's scenery was to appear as flowing directly from nature by inducing and preserving a harmonious *Chi* or vital breath in the garden composition. This was also called the Taoist resonance of the vital breath, whereby the *Chi* in the garden echoed the *Chi* present in nature in order to obtain a vibrant landscape design. On the other hand, the imagination of the gardener was let loose and free from strict social conventions. Subsequently, the garden became a refuge from an unreliable society, which offered communion with nature as a means to be at peace, to be one with the universe.<sup>13</sup>

H.4.2

H.4.3

H.4.4

H.4.5

- H.4.2 Various patterns in *He Yuan, The He family Garden* (19th century), Yangzhou.
- H.4.3 Visual busyness created by a pattern repetition in *Zhuozheng Yuan, The Humble Administrator's Garden* (16th century), Suzhou.
- H.4.4 Peacock feather motif pavement enhancing the visual busyness.
- H.4.5 *Wangshi Yuan, The Master of the Nets' Garden* (10th–13th century), Suzhou.

### 3.2 Bipolarity and incompleteness

The Tao's bipolarity concept of Yin and Yang, often associated with incompleteness or the complementary, was expressed through the combination of two principles in Chinese gardens. One method relied on fragmentation or multiplication of garden components to symbolize the oneness of the universe; the other method consisted in preventing the garden from being comprehended as a whole.<sup>14</sup> In this way, the visitor was invited to complete the garden composition by imagining the missing parts or by envisioning the garden beyond the views displayed before him. Thus he explored the garden not only physically but also mentally, participating in the dynamic oscillation of the Yin and Yang that animated the garden.

In practice, Chinese gardens were overwhelmed with symbols bearing various meanings that could be interpreted in different manners according to the viewer's disposition.<sup>15</sup> Therefore, they could be perceived or experienced in endless combinations, making them ungraspable in one embrace. This intellectual busyness was enhanced by visual reiterations of patterns in many garden components such as railing, stone pavement or wooden latticework (figs H.4.2–4). True to the bipolar principle, this repetition also enabled the unification of the wide range of courtyards present in the garden. It constituted the thin red line that wove together the disparate moods, feelings and buildings of the garden into the oneness of the Tao.

Another application of bipolarity was in the location and usage of water in Chinese gardens. In ancient China, a lot depended on the yearly rain cycle and water was therefore considered imbued with the power of immortality. From the fifth century BC, it came to be regarded in Taoism as the origin that fed all the ten thousand beings. Water represented the feminine receiving pole, balancing the masculine assertive pole of the mountain. In gardens, the succession of small enclosed courtyards gradually built up a tension that was expected to conclude in a large open space at its core (fig H.4.5). There was the lake, always in its natural peaceful state, that set the quiet mood in the garden.<sup>16</sup> Often irregular in shape, it was bordered by various sizes of rocks that hindered the visitor from grasping the whole view at once, giving the illusion of a larger lake. It was the pinnacle of the promenade: once by the water shore, one would take the time to read, paint or compose lyrical poems. When space was an issue, the lake was also divided into different water components, following the Taoist principle of multiplicity.

### 3.3 Tao in Chinese Rockeries

One of Chinese's favourite pastimes was to amass rocks of various sizes during their walk. This habit derived from ancient myths and beliefs that related stories of peculiar stones transmitting to humans the supernatural power attributed to holy mountains.<sup>17</sup> Most of those collected rocks were made of limestone, weathered by rain and wind. Hollowed or often pierced in some areas, they presented a jagged shape that triggered the viewer's imagination. For this reason, small pebbles and stones, called *Gongshi* or scholarstone (fig H.4.6), were then placed on a desk as a source of inspiration for the owner, whereas bigger rocks were placed in gardens in the form of rockeries.<sup>18</sup>

In the latter case, they were referred to as *Taihu rocks* (fig H.4.7), following the name of the *Tai* Lake or Great Lake, in the province of Jiangsu from which most of the rocks were extracted.<sup>19</sup> Their odd and tortuous erosions epitomized the *wu-wei* spirit of the Tao as the original rocks let themselves be sculpted by natural incidents. By so doing, their superfluous matter was weathered away, unveiling progressively the true essence of the rock. Despite appearing as if petrified in movement, they were also subject to a silent, ongoing decay, embodying thereby the transience of the Taoist process of becoming.

In gardens, they were strategically positioned to form a strange composition where voids created in-between the hollowed rocks participated in the broad complex pattern of the void and full. There were three types of rock configuration for the pleasure of the viewer: fake mountains, shores and solitary rocks.<sup>20</sup>

Fake mountains were usually composed of large rocks arranged in piles and placed so as to form here and there natural tunnels and grottoes. Those rocks could also be positioned as if directly emerging from the ground, for a more natural effect.<sup>21</sup> According to Li Li-Weng, they usually portrayed the *T'ou*, go-through, quality which enabled the viewer to, mentally or physically, cross the fake mountains.<sup>22</sup> These rockeries were particularly useful for hiding unsightly components, such as a staircase giving access to an elevated study room (fig H.4.8).

Shore configurations were located by a water component such as a pond or a watercourse (fig H.4.9). They were organized to project the irregular silhouette of mountains witnessed along a river. The *Yuan Yeh* declared in fact that the ideal site for a rock was in the middle of a pond where it could then be reached by a 'flying' bridge.<sup>23</sup>

H.4.6

H.4.8

H.4.7

H.4.9

- H.4.6 Gongshi scholarstones.
- H.4.7 Solitary *Taihu* rock in *Liuyuan, The Lingering Garden* (16th century), Suzhou.
- H.4.8 Mountain with lace-bark pine in *He Yuan, The He family Garden* (19th century), Yangzhou.
- H.4.9 Shore type *Taihu* rockgarden in *Shih Tzu Lin, The Stone Lion Grove* (14th century), Suzhou.



Solitary rocks were often of a spectacular size, too awkward to harmonize with a preset environment (fig H.4.7). For this reason, they were sited next to a pine tree, bushes or flowers that balanced their status and simultaneously helped their integration into the rest of the garden. Their sculptural features were best appreciated from an adjacent pavilion called the *Pai-shih*.<sup>24</sup> When laid horizontally, they also served a mundane purpose as a bench welcoming the tired wanderer during his walk.

According to Li Li-Weng, these configurations were to seek paradoxical effects in their presentation and composition that would contrast with their rough and heavy materiality:<sup>25</sup> the delicacy or *Shou* – thin – quality, and the weightlessness or *Lou* – leak or drip – quality. This could be achieved, for instance, by inserting several gaps to weaken and soften the overall rigidity. The resulting laciness would also lighten up the visual density. Another example would be exhibiting solitary stones with their heaviest part on top in order to create a floating effect that would defy gravity. This quest of the paradox stood in fact for the rejection of stagnancy or permanence, as the Tao represented the transitoriness of life, the delicate equilibrium between the opposite poles of Yin and Yang.

As a result, the wanderer not only admired the rockeries visually but also experienced them physically. Meandering cavities and irregular mountains, playful light and shadow bouncing on plants and rock protrusions, constant merging and unravelling of void and full along the promenade made the rockeries ungraspable in their whole. In this context, the visitor's appreciation of boundaries, space and time were gone adrift. For all those reasons, rockeries were considered as the most faithful reflection of Tao in Chinese gardens.

## 4. Landscape painting influence

Nelson I. Wu gave this definition of a Chinese garden:

In this eternally negative space, between reason and untarnished emotion, between the correctness of the straight line and the effortlessness of the curve, between the measurable and the romantic infinity, lays the Chinese garden which is between architecture and landscape painting.<sup>26</sup>

In China, the history of landscape painting developed closely alongside the history of gardening, up to a point where it was difficult to distinguish one from the other. Albeit both were instigated by Taoism, landscape painters established principles that influenced the way to design or

tend a garden while the garden provided in its turn a setting for the landscape painters.<sup>27</sup>

### 4.1 Monochromatism

The *Tao Te Ching* stated that 'the five colours dazzle the eye, the five tastes confuse the tongue'.<sup>28</sup> The development of monochromatic landscape paintings affected the colour palette used in Chinese gardens. Green and light grey or white were the basic tones against which seasonal blossoms momentarily brought a contrasting climax (fig H.4.10).<sup>29</sup> As in painting, colours in gardens were supplanted by the play of light and shadows, the fleeting reflections on water and the movement of leaves against the courtyards' surrounding walls. These effects were accentuated in the garden by diverse strategies. Partitioning or surrounding walls were at times rubbed with white wax to get a shimmering patina which would add more varieties of reflection.<sup>30</sup> The elaborate disposition of small enclosed courtyards also allowed various juxtapositions of opposite qualities, especially with light and shadows. As one penetrated deeper into this puzzle of intricate courtyards, the play of light and shadows became equally more complex.

The painter Wang Wei of the Tang dynasty went further in the monochromatic technique by representing mountains through their structure and texture rather than by their shape. This had an impact on rockeries' composition and location in gardens and, above all, on the appreciation of rocks' surface conditions: eroded, damaged, punched, smooth, rough, etc. In fact, a rockery didn't rely for its appeal exclusively on colours but offered other formal merits such as the sound made when it was hit by raindrops or the feel of the grain conveyed through the finger's touch.<sup>31</sup> Hence, monochromatism was expressed in rockeries through their sets of striations, holes and other creases that were to be coordinated to create a harmonious ensemble against the backdrop of a white wall. Those voids were often compared to the void found in various brushstrokes of a Chinese traditional landscape painting.

### 4.2 Courtyard cell as space-time interval

Wang Wei is also said to have developed the scroll painting that a viewer unrolled from right to left, in order to experience the landscape unfurling before him.<sup>32</sup> This scroll introduced the time factor into the painting's contemplation: the present overlapped with the past of the painted landscape, in addition to the act of unrolling which also

H.4.13

H.4.10

H.4.11

H.4.12

- H.4.10 Monochromatic palette of the rockgarden in *Liuyuan, The Lingering Garden* (16th century), Suzhou.
- H.4.11 Zhuozheng Yuan, *The Humble Administrator's Garden* (16th century), Suzhou.
- H.4.12 Courtyard cells of *Yuan Ming Yuan, The Garden of Perfect Brightness* (18th–19th century), Beijing.
- H.4.13 Huang Gongwang, detail of *Dwelling in the Fuchun Mountains* (1347–50).

emphasized the moment lived within the depicted landscape. In these formats, diverse panoramas were both separated and linked by water, fog or clouds. This principle was carried on in Chinese gardens in the form of white surrounding or partitioning walls bordering all courtyards in the garden. These acted as the blank space or gap left in a Chinese landscape painting, separating and linking at once two contiguous spaces of a garden.

A few openings in the enclosing walls were judiciously placed, so as to suggest or offer glimpses of what came next. This prompted the viewer to move through the garden at a pace orchestrated by the garden's designer. As a result, the walk could change endlessly according to the order and combination of courtyards to visit. The design was not made to be rationally comprehensible but rather to be experienced infinitely in linear progression, as one would when travelling through the landscape of an unrolled Chinese painting scroll. In this perspective, the walls allowed the garden to expand endlessly, generating thereby a limitless space (fig H.4.11).<sup>33</sup>

As the stroller wandered through the labyrinth of courtyards, going from scenery to scenery by navigating across partitioning walls, he also gradually lost track of the present time (fig H.4.12). Just as in landscape paintings, various temporalities overlapped in the succession of courtyards: the past evoked in poetic inscriptions, the lifespan of plants or the rocks' erosion ... This prompted a process of introspection in the visitor, who would relate the views before him to his journey in life, suspending thereby the present flowing time. By doing so, the visitor merged with the flow of the Tao in the garden, attaining thereby his plenitude. Charles Jencks best expressed this situation by labelling the Chinese garden a 'spaceless space and timeless time'.<sup>34</sup> He recognized that the garden's maze of enclosed courtyards introduced a breathing gap in the rigid urban structure of the city as well as in the viewer's social life.

### 4.3 Duration

In contrast to the swiftness of landscape paintings, gardens were never truly finished since their constituents were subject to constant growth and decay. Thus, garden designers could find it awkward to enthuse over painting techniques that depicted a frozen moment in time. However, the Yuan painter Huang Gong Wang (14th century) was admired and often cited by those garden designers.<sup>35</sup> Indeed, unlike other artists who painted a landscape immediately after a long period of meditation, this

artist preferred to paint at a slow pace, going over and over the same drawing to weigh its final effect. Each revision was accompanied by new compositional elements or by a fresh layer of brushstrokes superposed over the existing ones. The whole work could take up to three years to complete as each alteration was undertaken only when the time felt right to the artist.

As a result, his paintings, like *Dwelling in the Fuchun Mountains* (1347–1350), demonstrated a wider range of textures and a dynamic overall composition that made his scenery more alive than existing landscapes (fig H.4.13). His method was well suited to gardening since it gave time for plants to grow, for pavilions to be finished and for rocks to anchor deep in the ground. The garden designer could then enjoy the effect of the whole composition in various seasons before isolating issues that needed tuning or improving to achieve the desired result. However, this long working process had to be tackled cautiously and critically as the overzealous garden builder could end up drowning the very essence of the landscape in a profusion of detail if he overlooked the balance of the natural cycle of growth and decay.

## 5. Chinese and English picturesque gardens

Chinese literati gardens and English picturesque gardens present great similarities despite the geographic and chronologic disparities. Both garden types present emblematic components that reflect the owner's vision of the world and/or evocative elements arousing various moods and feelings that enhance not only the sensorial experience but also the imagination of the viewer. They both stem from an art of landscape where poetry, painting and gardening closely influenced one another, creating new styles, expressions and techniques, so that the evolution of one could not be untangled from the evolution of the others.

However, this translation yields various results depending on the cultural background. Some outcomes are similar, such as the quest for overall visual busyness in the garden, or the play of texture, colour and chiaroscuro in vegetation or rockeries. The Chinese concept of *Li* is also echoed by early advocates of the English picturesque such as Shaftesbury who 'believed that in every natural object was an intrinsic or inherent form and that these nascent tendencies could be variously cultivated and perfected in practical gardening'.<sup>136</sup> Other effects are opposite, like the garden's boundlessness which is visually achieved thanks to sunken ditches and ha-ha for picturesque gardens while it is intellectually suggested



through endless visual compartmentalization for Chinese gardens. One emulates the country's natural landscape by epitomizing its spirit through the careful balance of rockeries and water within a paved courtyard, whereas the other calls in the country by celebrating the natural topography and indigenous plants of the place. All these comparable points can be used to reflect the oriental void in occidental culture.

## 6. Conclusion

Chinese gardens ally in their composition Taoist philosophical concepts and tangible techniques transferred from the art of landscape painting. In response to the oriental void, they can thus provide the conceptual but above all the material hyphens in the following manners.

On the one hand, these gardens can be perceived as a conceptual hyphen for the *Ma* interval.<sup>37</sup> They create a spatial interruption within the rigid urban grid and insert a temporal break within the routine of daily life. Chinese gardens can therefore strengthen the link between the oriental void and the occidental intercalary space, *milieu*, where space turns into a palpable medium.<sup>38</sup>

On the other hand, gardens' key components such as the *Taihu* rocks and partitioning walls can be used as material hyphens of the oriental void. Indeed, those rocks develop a hollowed structure as if they are physically collecting various sets of void and full as time passes by. In parallel, they also embody the transient, fleeting qualities of the oriental void. Furthermore, they present a fractal quality: the whole composition of a rockery, skilfully blending void and full, seems to be reiterated in the perforated structure of a *Taihu* rock as well as in the porous texture of its substance. This fractal aspect can be related to the synecdoche quality of the oriental void. In this respect, the *Taihu* rocks bring to mind the transient moss as it also allies void and full within its spongy biologic structure and acts as a synoptic microcosm of the surrounding environment thanks to its accumulative features.<sup>39</sup> In the case of partitioning walls, the hyphen materialized in the ensuing spatial compartmentalization and sequential organization. Their endless configurations conveyed the poetic of a floating cloud symbolizing the transitory nature of the oriental void.



# 5

## Alexander Pope's Grotto

The bus I used to take to get to work passed by the stop 'Pope's grotto' in Twickenham. I wanted to have a closer look at the grotto, in relation to picturesque ruins in England but also in relation to the occidental void – a grotto as a hollow, excavated space. Pope's grotto was not the first, the largest or the most impressive grotto built during the picturesque era, but it was significant as it embodied its owner's views and beliefs which affected English picturesque landscape gardens.<sup>1</sup> By chance, my visit was made at the time when my theoretical research dealt with Chinese gardens, in particular with Chinese rockeries. This coincidence prompted the correlation between the void of the occidental grotto and the void of the oriental rockery.

### 1. Context

In 1718, Pope received the opportunity to build his house in Twickenham, a quiet, idyllic and trendy place, close to bustling London. He built a four-storey villa by the river bank, in neo-Palladian style, following James Gibbs's advice (fig H.5.1).<sup>2</sup> The basement of the house was level with the riverside on the west while the ground floor, right above it, was level with the road running parallel to the river on the east. Since the sloping garden was separated from the house by this road, Pope decided to dig an underground passage to join the house with the garden. This passage started from the basement of the house, which Pope called the 'grotto', and extended under the road through a tunnel, the 'subterraneous way', concluding in the garden (fig H.5.2).<sup>3</sup> Besides the physical connection, it also created a visual link by means of framed views between the garden and the river.

This was a curious decision since most gardens at the time were related to the house by means of terraces or platforms from where the panorama was appreciated in one embrace. The fastidious task of building the grotto<sup>4</sup> began in 1720, and relentless modifications were brought to its design for the next twenty years. Its development was largely made in two phases. First, Pope decided to replicate a nymphaeum for his grotto, probably inspired by the translation work he made of Homer's *Iliad* (ca. 8th century BC). But, by 1739, this composition had evolved into a museum of minerals, more in tune with the trend of its time: geology.

H.5.1

H.5.2

H.5.3

H.5.4

- H.5.1     Augustin Heckel, *View of Pope's villa at Twickenham* (1749).
- H.5.2     Site plan of Pope's villa and garden in relation to the road and river ca. 1725.
- H.5.3     Plan of grotto and subterraneous way ca. 1725, based on Pope's drawings.
- H.5.4     Drawing attributed to William Kent, showing Pope in his grotto (ca. 1730–40).



## 2. First stage: nymphaeum

Pope described the first stage of the grotto with enthusiasm in a letter to his friend Edward Blount in the summer of 1725 (fig H.5.3). By then, the subterranean way was dark and finished 'rough with shells, flints and iron ore',<sup>5</sup> with benches for resting at the garden end. By contrast, his grotto's entrance presented a smooth finish and offered a surprising spectacle once the doors were closed:

When you shut the doors of this grotto, it becomes on the instant, from a luminous room, a 'camera obscura' on the walls of which all the objects of the River, Hills, Woods and Boats are forming a moving picture in their visible radiations.<sup>6</sup>

Furthermore, the grotto's brick masonry was covered with shells, mirrors, polished stones and Cornish diamonds that would glitter and reflect light in all directions (fig H.5.4). This visual experience was then completed by the murmur of spring water which ran naturally in the grotto. The providential discovery of this water source enabled Pope to emulate the grottoes of classical antiquity that were sacred places where water spirits, or nymphs, resided.<sup>7</sup>

## 3. Second stage: mineral museum

By 1739, Pope had developed an obsession with geology, a subject made fashionable by the mid eighteenth century thanks to the excavation of fossils that underlined the scientific origin of the earth. As a result, the grotto's layout and appearance were redesigned following models of mines in Cornwall. New chambers were added to its early composition, and the grotto's walls presented veins and stratifications that mimicked the natural strata of a quarry. Fake stalactites hanging from the ceiling through an elaborate suspension system completed the image. Materials consisted of stones and minerals that were mostly brought in from quarries in Bath but also from other countries as far afield as Egypt or Brazil. Corals and fossilized wood were also used subsequently as ornaments. Added layer upon layer, these materials progressively narrowed down the grotto's space (figs H.5.5–8). Nevertheless, this spatial cutback was in part compensated by the multiplication of chambers. These were made useful to the household's routine thanks to the installation of fireplaces or water basins. The grotto evolved thereby from having decorative or circulatory status to being an active practical space. By the summer of 1742, the museum of minerals was completed to Pope's standard and was ready to entertain guests and family alike.<sup>8</sup>

After his death, the underground passage was lengthened owing to the widening of the road above ground and the grotto was left to decay with the villa's demolition in 1802. Enduring further degradations through successive ownerships, what remains of the grotto today is a far cry from its heyday. School buildings above and in front of the grotto obstruct all views of the river, leaving behind a dark gloomy space invaded by spider webs and rodents (fig H.5.9).

## 4. Pope's grotto and the oriental void

It is not through the emptiness of the dark excavated space that Pope's grotto relates to the oriental void. This association mostly relies on the grotto's cumulative feature and its potential to be relentlessly modified with regard to its function, materials or shape. Neither indoor nor outdoor, or maybe both, the grotto circulates an ambiguous status, always in the process of becoming.

Indeed, Pope's grotto can be variably perceived as a ballroom, a refuge, a study, a bathing place, a corridor, a museum, everything and nothing, according to the needs or desires of its users. In consequence, the grotto, like ruins, collects memories or traces left by its users. From broken mirrors, crucifixes or worn-out benches to more recent scabbled notes or missing shells, those marks trigger the viewer's imagination which then transforms the original grotto into an-other. The grotto becomes therefore a spatial palimpsest which embodies the transitory nature of the oriental void.

In regard to materials, the grotto's minerals and strata constitute a geological sample which attempts to epitomize the earth's tectonic structure in the same way that moss acts as a synoptic part of their surroundings. Furthermore, they also chemically react to the surrounding air humidity and temperature as well as to their users' breathing and sweating. On the one hand, this engenders an ecological environment supporting microbiologic life which is indirectly perceptible in the apparition of green algae or moss on the grotto's wall. On the other hand, it modifies the grotto's overall colour pattern with the oxidation of its metal components such as iron or copper. The topography of the grotto's surface is also constantly reshaped by water streaming down its walls. In this way, the materials turn inside out, or outside in – a natural phenomenon which happens at a larger scale. The grotto appears as a synopsis of the geo- and hydromorphologic movements found in nature, thereby echoing the median void's relation to the original void.

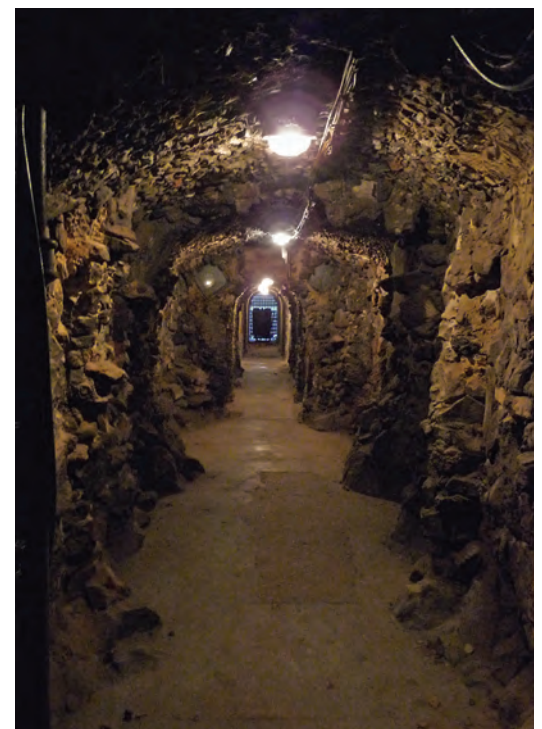
H.5.5

H.5.6

H.5.7

H.5.8

H.5.9



H.5.5 Alexander Pope, plan of the grotto (ca. 1740).

H.5.6 John Serle, *A plan of the grotto* (1745).

H.5.7 Samuel Lewis, *Plan of the grotto of the late Alexander Pope Esquire at Twickenham* (1785).

H.5.8 Samuel Lewis, *Pope's grotto* (1786).

H.5.9 View of Pope's grotto and subterranean way in November 2008.

Finally, diverse eras and durations are involved in Pope's grotto. Indeed, this eighteenth-century grotto was built over a long period of time – twenty years – unlike its contemporaries. Then, the present time of the viewer collides with the time built up in rocks and fossils in Pope's grotto. Thus, the continuous mutation of the space, in its function and in its forms, combined with this temporal overlaying, generates an elastic space-time continuum in the image of the oriental void. In this manner, the grotto is revealed through not only sensorial but also intellectual experience by the viewer.

## 5. Conclusion

At its origin, Pope's grotto materializes the negative or hollow space of the occidental void, yet its historic, compositional, material and temporal features reveal its potential to become a conceptual hyphen between the occidental and oriental void. For instance, the western grotto as site for water deities can be assimilated to the eastern *Taihu* rock representing the Sacred Mountains where lived the immortal gods.<sup>9</sup> In this perspective, the void of the occidental grotto can be assimilated to the void of the Chinese foraminate rockeries.

Indeed, from the picturesque garden's perspective, Chinese rockeries can be assimilated to a light, permeable grotto, complete with its views, passages, cumulative features – literati collecting *Taihu* rocks or *Gongshi* scholarstones – and associative potential. However, the grotto is often unique, small in scale and confined to a particular area in the landscape, unlike Chinese rockeries that take various shapes, scattered here and there across the garden. This obstacle is surmounted by playing with one's imagination: each hole of a *Taihu* rock can hold a captivating grotto, for instance, but the rock can also be perceived as a fractal component of the grotto. In this way, the negative space of the occidental grotto is emancipated from the underground darkness to become a positive space, neither internal nor external, carved in the openness of air. The occidental void embodied by the grotto joins then the oriental void represented by the Chinese garden rockeries.



## Conclusion of Part II

The moss, ruin, English picturesque landscape, Chinese garden and grotto presented as hyphens in this section highlighted various facets of the oriental void in a graspable manner for occidental culture. They explained abstract oriental concepts with western familiar terms or illustrated the elusive Taoist philosophy with occidental metaphors. These hyphens emerged as my personal version or interpretation of the oriental void as different subjects/themes could have created different hyphens that presented other understandings of the void.

Although exposed in a linear approach, these hyphens didn't appear chronologically but rather chaotically through the overlapping/ divergence of their history and inherent principles, in parallel to the development of architectural projects. Indeed, the research on theory, practice and hyphens were made simultaneously and their outcome influenced one another in an organic manner. Their subsequent cross-reference and branching out into rhizomic formation echoed the dynamic interactions happening within the hyphenation of the oriental void. The task of converting these hyphens into architectural devices will be developed through projects of various scales in the third and final part.

# III Practice of the Void

- 1 The Bank's Barometer
- 2 Sited Moss: Invading or Fading Moss?
- 3 Ruining a Ruin

This part of the thesis regards the practice of the oriental void. It consists of three architectural projects that embody the key principles of the oriental void by using hyphens as tangible architectural parameters to build the project's narrative and define its material and pictorial outcome. Those projects can be themselves perceived as architectural hyphens joining the oriental and occidental void as they convey the principles of the oriental void by alluding to the Heideggerian understanding of architecture. It is to be noted that these projects were in fact developed alongside the theories on the void and contributed to the defining of some of the material or conceptual hyphens introduced in the previous section.

The *Bank's Barometer* works with moss to explore the reversibility/ reciprocity principle in the peculiar site formed by the Tivoli Corner of the Bank of England. Soane's architectural vision for the Tivoli Corner subsequently leads to the shaping of the ruin hyphens. This is followed by a project dealing with the interiorization process in the form of an installation *Sited Moss: Invading or Fading Architecture?* created at the Wilkins Portico of University College London. Its architectural drawings are made in parallel to the theoretic research on the picturesque and Chinese gardens. Finally, *Ruining a Ruin* investigates the mutation principle with a project that evolves through time on a site located at the heart of the European Quarter in Brussels. This project constitutes the pinnacle of the thesis as it brings all hyphens together as a coherent whole in order to epitomize the oriental void.

The following chapters are organized in sections, comprising of text followed by the corresponding drawings, in order to clarify the reading of this part.





# 1

## The Bank's Barometer

As explained in part II, chapter 1, the search for a site for my first architectural project followed the hidden course of the Walbrook river through the City of London. The visit organized by Jane Trowell of Platform triggered my desire to work on a project that would relate a present ecologic issue with a socio-economic condition. In parallel, this quest for a site also provided the thesis's first material and conceptual hyphen in the form of moss. Its adaptability to various environmental contexts and its sensitivity to diverse types of pollutant as well as its appropriate embodiment of the oriental void's properties made moss the ideal catalyst to incorporate in this project. My intention was then to put into practice the Taoist principle of reversibility/reciprocity in the context of an architectural design. As a brief reminder, the latter principle enabled all beings to recover their former state but above all enabled a qualitative exchange between space and time, akin to the intercalary spacing of *Ma*.<sup>1</sup>

The chosen site was the Tivoli Corner of the Bank of England because its odd spatial features were immediately reminiscent of the oriental void's ambiguous identity: neither indoors, nor outdoors, nor private, nor public, a useless space used every day by Londoners ...

### 1. History of the Bank of England

The Bank of England was worked over by seven different architects over a period of two hundred years from 1732 to 1939, from George Sampson, Sir Robert Taylor, Sir John Soane and Professor C.R. Cockerell to Philip C. Hardwick, Sir Arthur Blomfield and Sir Herbert Baker. It was the first building in Europe to be constructed for the precise purpose of a bank as former banks were temporarily located within 'palaces, hotels or town halls'.<sup>2</sup> The situation came to change mostly because of the rapid economic development linked to the industrialization of the country. The subsequent need for the faster and regulated circulation of vast amounts of capital was answered by the creation of a private institution, the Bank of England, which would act as the government's banker. Hence, a whole new set of functions was requested in the brief addressed to the architect: security issues, spaces open to the public, private spaces for printing and administrative activities, the symbolic representation of an established power ... Owing to the absence of former architectural references, Soane's predecessors drew their inspiration from traditional sources such as palaces and religious constructions. However, Soane sought to create a distinctive form that was unrelated to all existing buildings, a style described by John Summerson as 'far and away the most original architectural language in Europe at that moment.'<sup>3</sup>

Meanwhile, the site of the Bank of England was expanding according to its hectic economic activities: if more space was needed for the Bank, more lands were acquired and the building extended. By 1801, Soane had finalized negotiations on behalf of the Bank of England: the final lands were bought, the authorization from Parliament received and streets modified to create an isolated island for the site. He completed the Bank of England from 1788 to 1833, offering a remarkable one-storey building of 10,000m<sup>2</sup>. James Elmes declared in his lecture on architecture at the Royal Academy (1821) that Soane's Bank of England was 'massive and noble, its construction of genuine brick, iron and stone. When London is fallen ... this building along with those of Wren, and the bridges, will be almost the only ruins left to indicate its [London's] present greatness'.<sup>4</sup>

## 2. The Tivoli Corner

During the expansion of the Bank of England round 1800, the Governor and the Court of Directors demanded a west entrance for the newly enlarged Bank. John Soane, architect in charge at the time, used the sharp angle made by Prince's Street and Lothbury Avenue to create a rounded triumphal entrance. The scheme being rejected, this corner later became simply 'a purely ornamental, independent monument whose sole function is to create an imposing "point de vue" effect'.<sup>5</sup>

The Tivoli Corner was built in reference to the Temple of Vesta (80 BC) at Hadrian's Villa in Tivoli, a site inspired itself by the ruins of Carthage and Troy (figs P.1.1–4). Soane was impressed by the small edifice which he visited in 1779 during his journey in Italy. The circular temple was a perfect illustration of the antique taste, yet offered an unusual architecture by treating regular classical features in an unconventional way for the time: shorter Corinthian columns without bases, stout yet audaciously adorned capitals, simplified entablatures ... Soane replicated this twist on classical architecture in the Tivoli Corner of the Bank of England (fig P.1.5).<sup>6</sup> The curved colonnade rose from a plain pedestal and bold leaves and flowers decorated the abacus of the Corinthian columns, while the spacing between the columns relied on measures taken from the Temple of Vesta. The attic of the Tivoli Corner was not aligned with the curve of the colonnade below but with the bank's solid wall which stood back from the colonnade. In consequence, the mass of the main building was hidden away from the street by the facade of the Tivoli Corner which thus appeared light and airy, contrasting with the blind heavy walls of the Bank of England. The curved colonnade connected to the lateral walls of the bank in a way that accentuated the visual back and forth movement

of the façade. The Tivoli Corner was also imbued with the emblematic of death, expressed through solemn motifs and details such as the urn-like vases and tombstone-looking attic topping the colonnade. By doing this, Soane suggested the Tivoli Corner's aspiration for immortality but also the Bank of England's moral responsibility as an institution.

P.1.1

P.1.2

P.1.3

P.1.4

P.1.5

- P.1.1–2 The *Vesta Temple* (80 BC) at *Hadrian's villa*, Tivoli.
- P.1.3–4 Section–elevation, plan of the *Vesta Temple*.
- P.1.5 John Soane, *Tivoli Corner of the Bank of England* (1807).

### 3. The Bank's Barometer

The *Bank's Barometer* attempts to transfer the financial pressure felt within the Bank onto the atmosphere of the Tivoli Corner using the moss's sensitivity to air contaminants. In this way, the project correlates the Bank's daily activity to the air pollution surrounding the site. The moss then acts as a barometer measuring the tension within the Bank by reacting to the ambient air of the Tivoli Corner.

It is in this architectural context that the fundamental principle of reversibility/reciprocity of the oriental void will be applied in two successive phases. First, it will experiment with the physical boundaries of the Tivoli Corner by exploiting its intricate spatial composition where in and out continuously intermingle. Then, the project will rely on the role played by the Bank of England to turn inside out the frenetic atmosphere reigning behind its walls.

#### 3.1 First phase: spatial manipulation

In order to convey the spaciousness of the Tivoli Corner, several snapshots were taken of the place, to capture the site through the eye of a first-time passer-by. The ensuing gaze followed the pedestrian movement in space or slowly wandered along the walls up to the sky perceived through an oculus in the ceiling. Back home, the Tivoli Corner was recreated by joining thirty fragmented views in three different manners following three different 'horizons': the floor, the wall and the oculus (fig P.1.6). In this way, the physical boundaries of the space could be manipulated so as to emphasize its ambiguous openness or enclosure. This blurring of the in and out threshold was the first step towards the embodiment of the reversibility/reciprocity of the oriental void.

The upper panorama is realized by offering a focus on the continuous floor. This accentuates the horizontal pedestrian movement between the two entrance-arches of the Tivoli Corner. The overall scene appears then elongated, where the viewer's gaze can move along with the pedestrian, and echoes thereby the interval of time necessary to physically cross the space. Furthermore, the boundaries of the Tivoli Corner can be endlessly extended by the viewer who can imagine the pedestrian walking beyond the picture frame. This way of representation parallels the landscape depicted on a Chinese handscroll.

The middle panorama concentrates on the Bank of England's solid wall which presents gravity and stillness. It highlights the Tivoli Corner's verticality and constitutes the hyphen between the Bank's private activities and the public exposure of the Tivoli Corner.

The lower panorama is organized around the oculus, and expresses the Tivoli Corner as an enclosed space. The viewer's gaze seems imprisoned within the building's peripheral limits and conveys a claustrophobic feeling where pedestrian and viewer are compelled to hold their breath upon entering the space. Time then appears suspended in its turn as reality within the confined space seems disconnected from the rest of the city. In this manner, the Tivoli Corner disrupts the flowing time of the city's daily routine.





P.1.6 Three spatial manipulations using the same number of pictures rearranged according to, respectively, the continuity of the floor, wall and ceiling's oculus.

## 3.2 Second phase: metaphoric translation

### 3.2.1 The Bank of England as moderator

A basic understanding of the Bank of England's position in the financial market is necessary to understand the key principle of the project. The main role of the Bank of England is to sustain a stable and efficient monetary and financial structure to maintain the country's economy in shape. Indeed, as banker to the government and all the other banks, the Bank is able to forecast rather precisely the fluctuation of money circulations on the British monetary market and operates on a daily basis to balance possible inequalities. The Bank of England is also the source issuing banknotes and therefore can select and implement the interest rate at which it will provide these funds each day. This interest rate infiltrates the financial system and affects then the whole economy, by modifying other interest rates such as mortgage, deposit, lending ... By doing so, the Bank also regulates and attempts to meet the inflation target set by the government in order to avoid an inflationary economic growth. In fact, when demand for goods and services increases faster than their supply, prices rise and inflation occurs. In reaction, the Bank intercedes by altering its interest rate so as to maintain overall price stability.

### 3.2.2 Air pollution parameters

Moss's sensitivity to air contaminants is used to detect the air pollution level around the Bank in the City of London. Such pollution is mostly due to emissions from motor vehicles circulating in the area: hydrocarbons, nitrogen oxides, sulphur dioxide, carbon mono/dioxide and particle matters ... In its turn, the traffic is regulated: on the one hand, by the Congestion Charge applied by Transport for London; and on the other hand, by the price of a barrel of oil on the international market.

The Congestion Charge is a fee for motorists circulating within specific zones of London during working days. It was introduced in 2003 in order primarily to ease traffic within those areas; the collected fund was to be reinvested for London's transport network. The scheme ultimately promoted the substitution of cars by underground trains, buses or bicycles for commuting around town.

At the time of the project, May 2004, the price of crude oil rocketed to new heights at \$40.94 a barrel, a thirteen-year high that threw the whole economic world into a panic. The soar in price was due to a combination of various parameters. Terrorist attacks on Saudi chemical plants and

security fears over Basra's Iraqi oil terminal raised the alarm for a possible shortage in oil supply at the beginning of the month.<sup>7</sup>

In parallel, OPEC members decided to reduce their oil output, while demand for oil supplies was rising in China and the United States. This had a large impact on stock markets as 'high oil prices could push up inflation in the West and hit economic growth around the world'.<sup>8</sup> In the streets of London, petrol's average price at the pumps jumped to 84p a litre,<sup>9</sup> heavily affecting daily usage of private vehicles (figs P.1.7–9).

### 3.2.3 Monitoring air pollution

In 1993, King's College London's Environmental Research Group set up the UK's first regional monitoring system, the London Air Quality Network (LAQN).<sup>10</sup> On behalf of the government's Department of Environment, Food and Rural Affairs (DEFRA), they manage a series of monitoring devices spread across town that provide daily weather data and pollution statistics to keep Londoners informed about the air quality of the area they live in. In 2004, the detector located at Senator House on Queen Victoria Street was the closest to my site. It recorded the concentration of the following pollutant particles in suspension in the air: sulphur dioxide, ozone and nitrogen oxides (fig P.1.10).

The effects of air pollution are aggravated by weather conditions. Under sunlight, some pollutants, such as hydrocarbons and nitrogen oxides ( $\text{NO}_x$ ), chemically react with gases in the atmosphere to produce low-level ozone ( $\text{O}_3$ ) and the greenhouse effect. Others pollutants, such as sulphur dioxide ( $\text{SO}_2$ ), dissolve easily in water to generate acid rain. In this respect, the weather forecast comes to play an important part as a monitoring device for the evolution of air pollution (fig P.1.11). Besides, formal patterns or textures shown on weather maps and satellite pictures curiously evoke the ramifications of a moss's rhizoids or the formation of moss clusters (fig P.1.12).<sup>11</sup> This similarity suggests the usage of weather maps' symbols and graphics to predict moss's location and propagation in the project's drawings: the moss forecast.

P.1.7

P.1.8

P.1.9



LIVE

BBC NEWS CHANNEL

Last Updated: Wednesday, 5 May, 2004, 22:38 GMT 23:38 UK


E-mail this to a friend

Printable version

**Oil soars despite overproduction**

**Oil prices have hit a fresh 13-year high despite an admission from the oil cartel Opec that its members are still pumping way beyond their quotas.**

Wednesday night's close in New York saw oil costing \$39.57 a barrel, the highest level since the 1990 Gulf War.



Opec's members are keeping the taps open - but prices remain high

The price is blamed on tight supplies in the US and the fear that violence in the Middle East will intensify.

Opec officially has a target of \$22-28 a barrel, but its own "basket" price has been way above that for months.

The basket price is about \$34, while June Brent crude - the main European benchmark - ended up 79 cents at \$36.72 a barrel after touching a high of \$36.90 - the highest price for a Brent contract since it hit \$37.10 a barrel on 17 October 1990.

[Click here for a graph of oil prices for the past 12 months](#)

**Up or down?**

Even so, Opec cut production at the beginning of April by a million barrels per day (bpd) to 23.5 million, after many of its 11 members complained that the falling dollar outweighed price rises as far as their revenues were concerned.

But according to the organisation's president, Purnomo Yusgiantoro, about 1.5 million bpd are still being pumped beyond the quota.

That, he hinted to reporters in Jakarta, meant a rise in the quota in June was unlikely.

Many traders and economists are concerned about the possible effects of continuing high prices on the global economy.

The pressure on oil prices from security fears - exacerbated by the killing of five foreign workers in Saudi Arabia over the weekend - has been added to by rapid economic growth in China and India.

P.1.7 'More petrol price rises on way' written by Ashley Seager in *The Guardian* (5 May 2004).

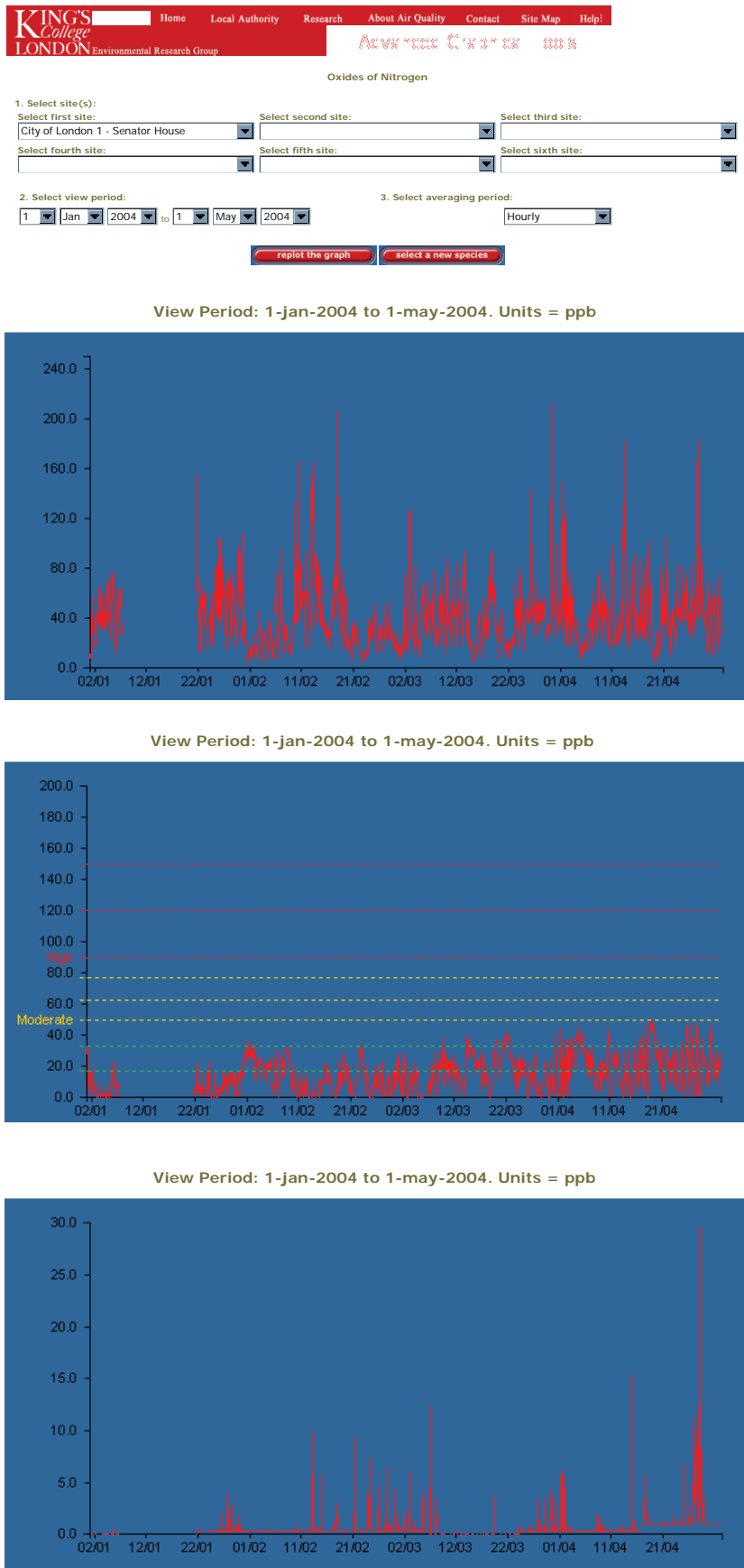
P.1.8 'An oily problem' written by Joe Thomas in *Investors' Chronicle* (7 May 2004).

P.1.9 Extract from 'Oil soars despite overproduction' on the BBC website (5 May 2004).

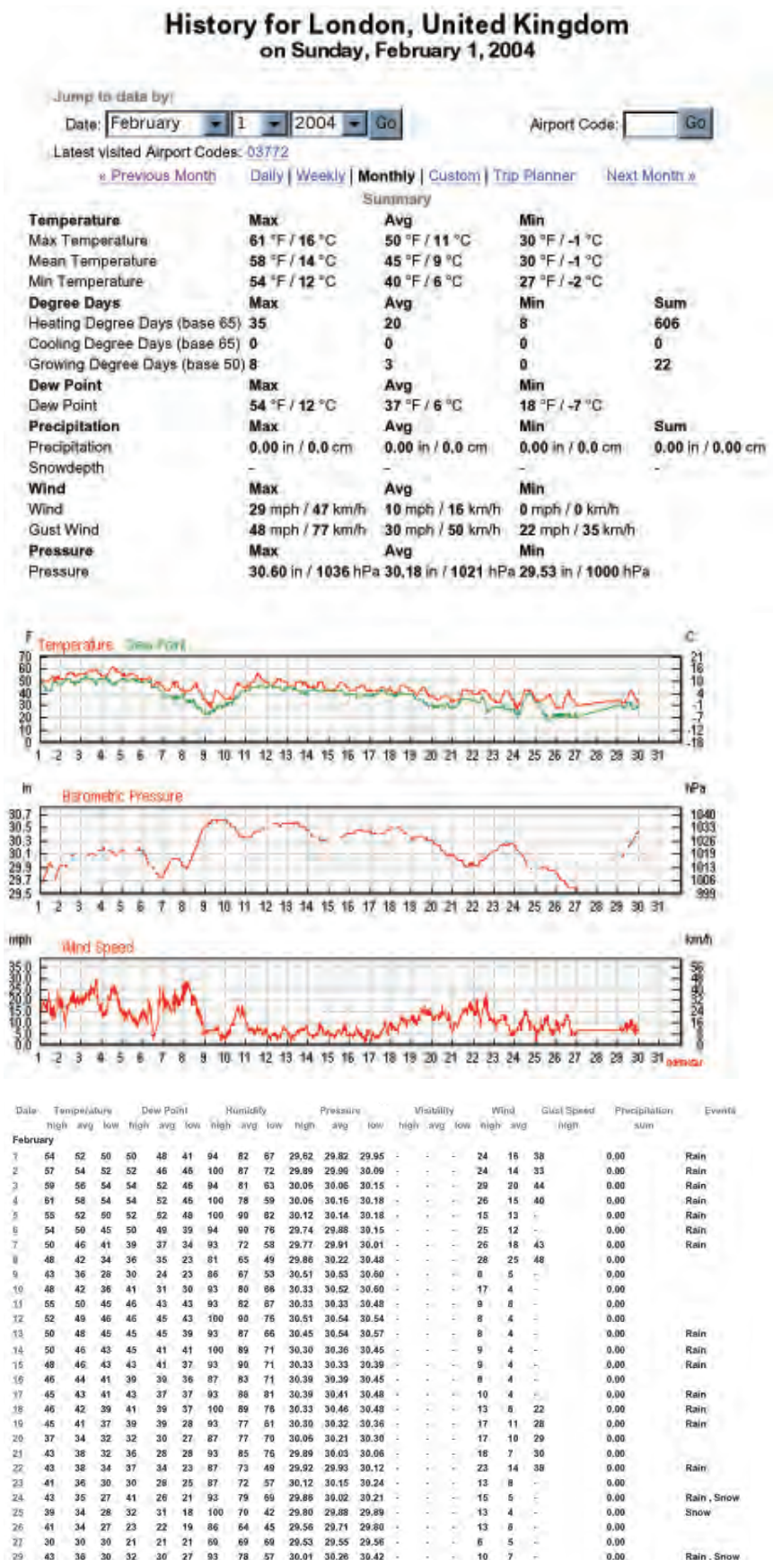
145



P.1.10



P.1.11



P.1.10 LAQN pollutant monitoring device located at the Senator House collecting data on nitrogen oxides, ozone and sulphur dioxide.

P.1.11 Weather data, graphs and figures for February 2004, provided on www.weather.herald.com



P.1.12

P.1.12 (from top left to bottom right) The wind pattern map, the regular weather map and the aviation weather map have uncanny visual similarities to wet moss, moss patches and fields. These in turn are reminiscent of satellite weather maps, temperature and precipitation maps. Despite their different scales, weather maps covering the whole of Europe look like a fractal part of small moss patches or like a diagram detailing moss's biological properties.

### 3.2.4 Principle of the Bank's Barometer

The project's principle relies on a series of chain reactions. When oil supply does not meet demand, the price of oil barrels increases and creates an inflationary financial situation. This constrains the Bank of England to burst into frenzied activity in order to hastily adjust interest rates and prevent an economic crisis. In this context, fewer cars pass on the street, reducing thereby the pollution level while making the moss grow and expand naturally. The Tivoli Corner's interior is then gradually moss-coated, softening the edges and blurring the boundaries of the building. The latter acquires a ruinous aspect, reflecting the crucial situation lived through by the Bank. Next, the moss's absorbent texture muffles the sound produced by the rain, wind, traffic, pedestrians' footsteps and conversations, enhancing the silence encountered in a ruin. On rainy days, the air of the Tivoli Corner will also slowly saturate with humidity so that the pressure lying on the Bank of England will be physically felt when walking through the misty space. Hence the inside situation of the Bank is reverberated on its outside.

When the scheme is inverted, i.e. the oil price declines, inducing traffic intensification and a rise in pollution levels, the moss's propagation slows down. Its biological structure weakens and dries up while its colour fades into a light rusted brown. The façade's moss coating acquires the tint of the stone and progressively thins down, making the Tivoli Corner's sensorial experience subside and finally blend with the atmosphere of the city. The Bank of England works on a pace akin to the rhythm of the rest of the city.

### 3.2.5 Moss forecast

The panoramas obtained in the first phase were turned into line drawings in order to serve as cartographic background for the moss forecast during the second phase of the project. These drawings emphasized the dusty or crumbly finish of the Tivoli Corner's architectural components and defined thereby zones propitious to moss propagation. In consequence, lines appeared then disappeared, partly erased as if the drawing itself was in a ruinous state; they offered the site an elusive quality which was necessary to trigger the viewer's imagination. Line drawings of the Tivoli Corner at its open and closed states are superposed (fig P.1.13). In each of them the thirty fragmented views composing the panoramas are numbered. Then a red dashed line traces each of their linear displacements to visualize the opening or closing manipulation of the space (fig P.1.13a).

The inside-out reversibility/reciprocity of the project is then expressed by the moss forecast drawings representing the Tivoli Corner at two different moments in time amid contrasting environmental and economical backgrounds. The first drawing narrates the Bank's usual situation in February 2004 (fig P.1.14) while the second recounts the unexpected tension lived by the Bank three months later (fig P.1.15). Each drawing is accompanied by a diagrammatic illustration and a graph that provide information on spatial, contextual and sensorial aspects of the project.

Using weather symbols for cloud coverage, the moss forecast predicts the direction and extent of moss propagation in relation to weather pattern and air pollution level indicated on the accompanying graph (figs P.1.17, 19). For instance, the moss patch's colour leaning towards blue-green tints during May 2004 denotes a thriving moss with a healthy textural density. This thickness would suggest that sound reverberation inside the Tivoli Corner is moderate to low. The situation would be inverted for February with smaller moss patches and colours leaning towards khaki-ochre. The moss's moisture level is affected by the temperature and intensity of the air in circulation. The latter information is embodied by the colour and symbol accompanying the arrow lines tracing the wind trail in this particular space. The moss's moisture level then highlights the fluctuation of relative humidity throughout the space of the Tivoli Corner. Dotted veils depict, with their folds and colour, areas where this humidity is concentrated or diluted (figs P.1.14a, 15a).

The accompanying diagrammatic illustration works as a snapshot of the overall atmosphere reigning in the Tivoli Corner. When the Bank runs through its regular routine, moss propagation is slow as mosses dry into a thin brown layer blending with the architectural features of the Tivoli Corner. The panorama's outlines appear then as usual, unaffected by the presence of moss (fig P.1.16). When the Bank's situation is critical, moss propagation accelerates and gradually transforms the Tivoli Corner into a ruin. The ambient air then saturates with humidity: the panorama's outlines appears faded as if perceived through a light fog (fig P.1.18).

The accompanying graph represents the annual calendar on which is recorded the evolution of the site's concentration in nitrogen oxides (NO<sub>x</sub>) as well as the fluctuating price of the crude oil barrel on the international market (figs P.1.17, 19). The first graph is based on LAQN's data and DEFRA's national statistics<sup>12</sup> (fig P.1.20) while the second graph relies on figures and graphs released by Platts/Comstock on the BBC News website

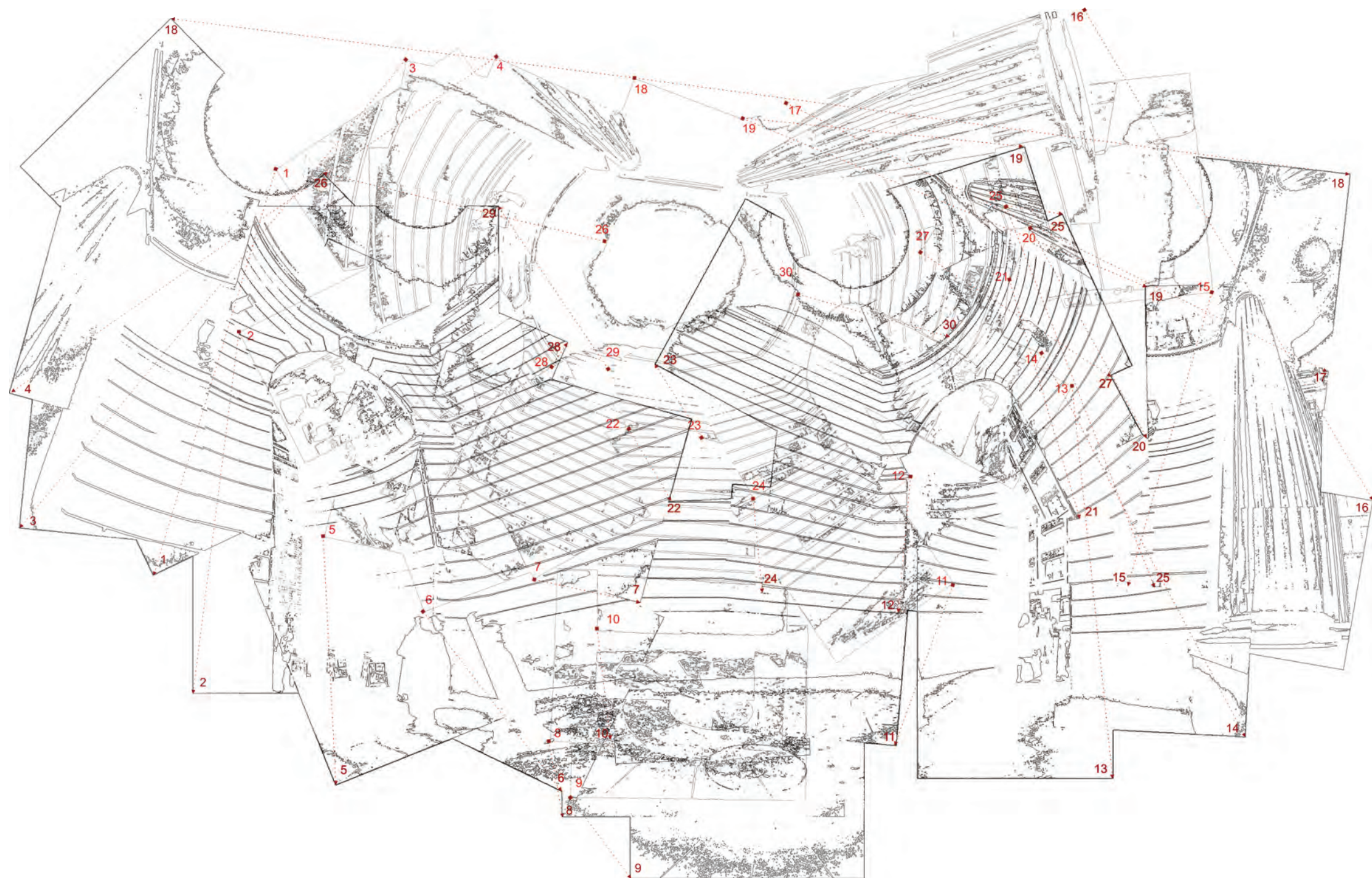


on 5 May 2004 (fig P.1.21). The red dotted line indicates the moderate level set by the LAQN at 45 ppb regarding the ozone concentration (fig P.1.10).

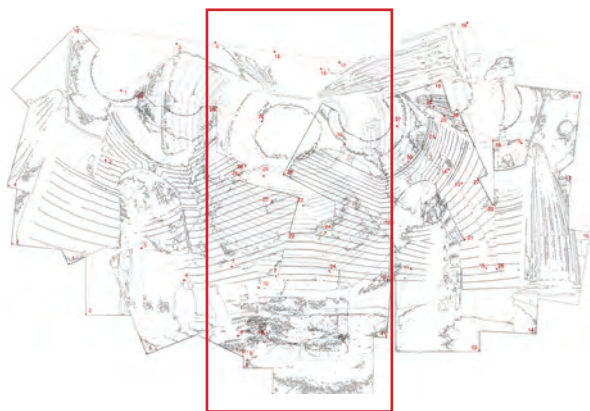
The combination of these three forecasts–graphs–diagrams ultimately conveys the sensorial experience of the Tivoli Corner: muffled sound, blurred vision and a feeling of discomfort on the skin are indirectly reported by the moss forecast. In this respect, these drawings' cartographic background is chosen to match each distinct atmosphere of the Bank of England: either emphasizing the suffocating feeling of the enclosed Tivoli Corner, or triggering the imaginary pursuit of the pedestrian stroll.



P.1.13



P.1.13 Trailing the spatial manipulation of Tivoli Corner from open to closed panoramas.



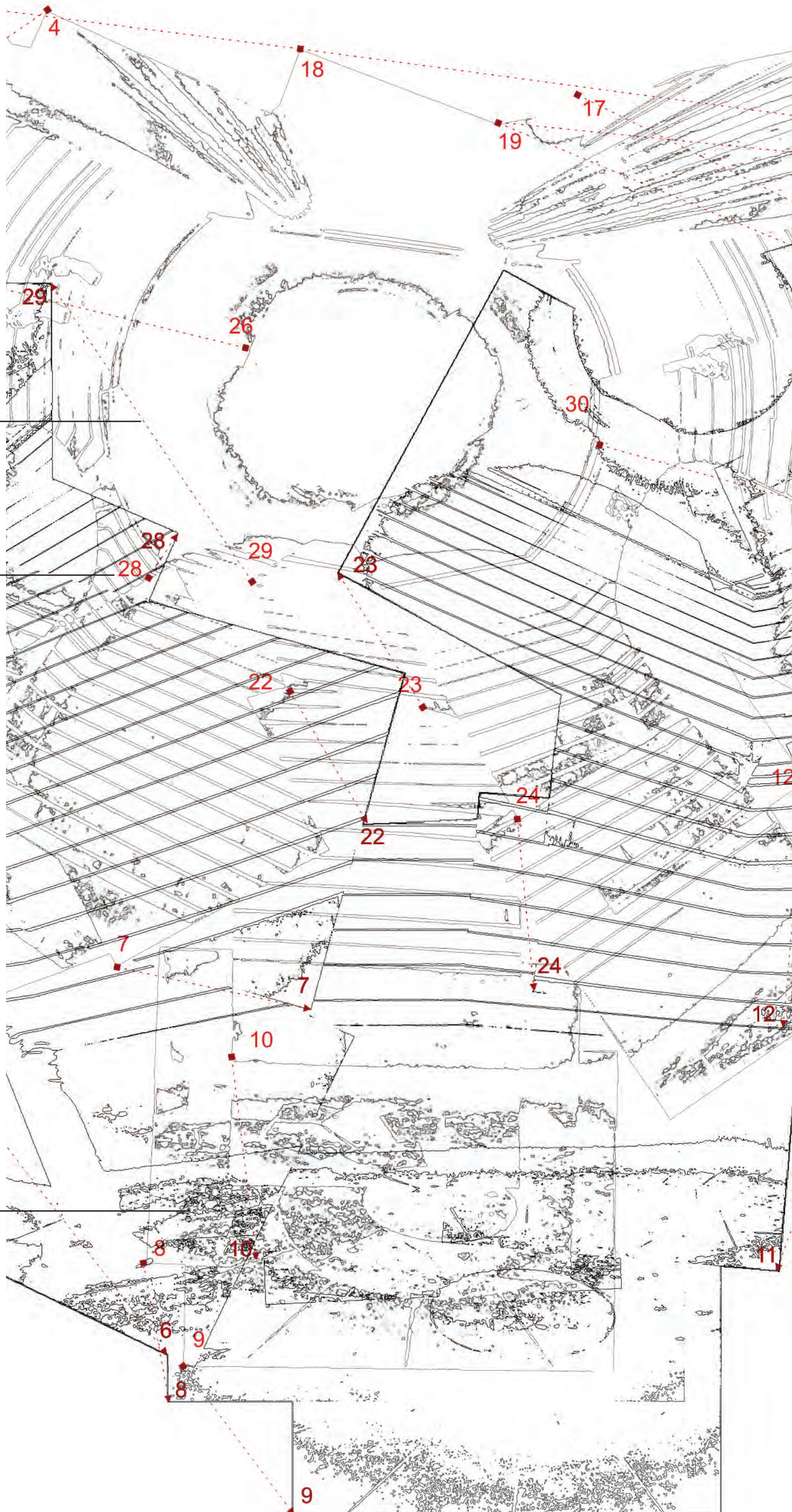
P.1.13a The spatial manipulation's trailing, detail.



Dotted line tracking the displacement of picture no. 29 from open to closed panoramas of Tivoli Corner

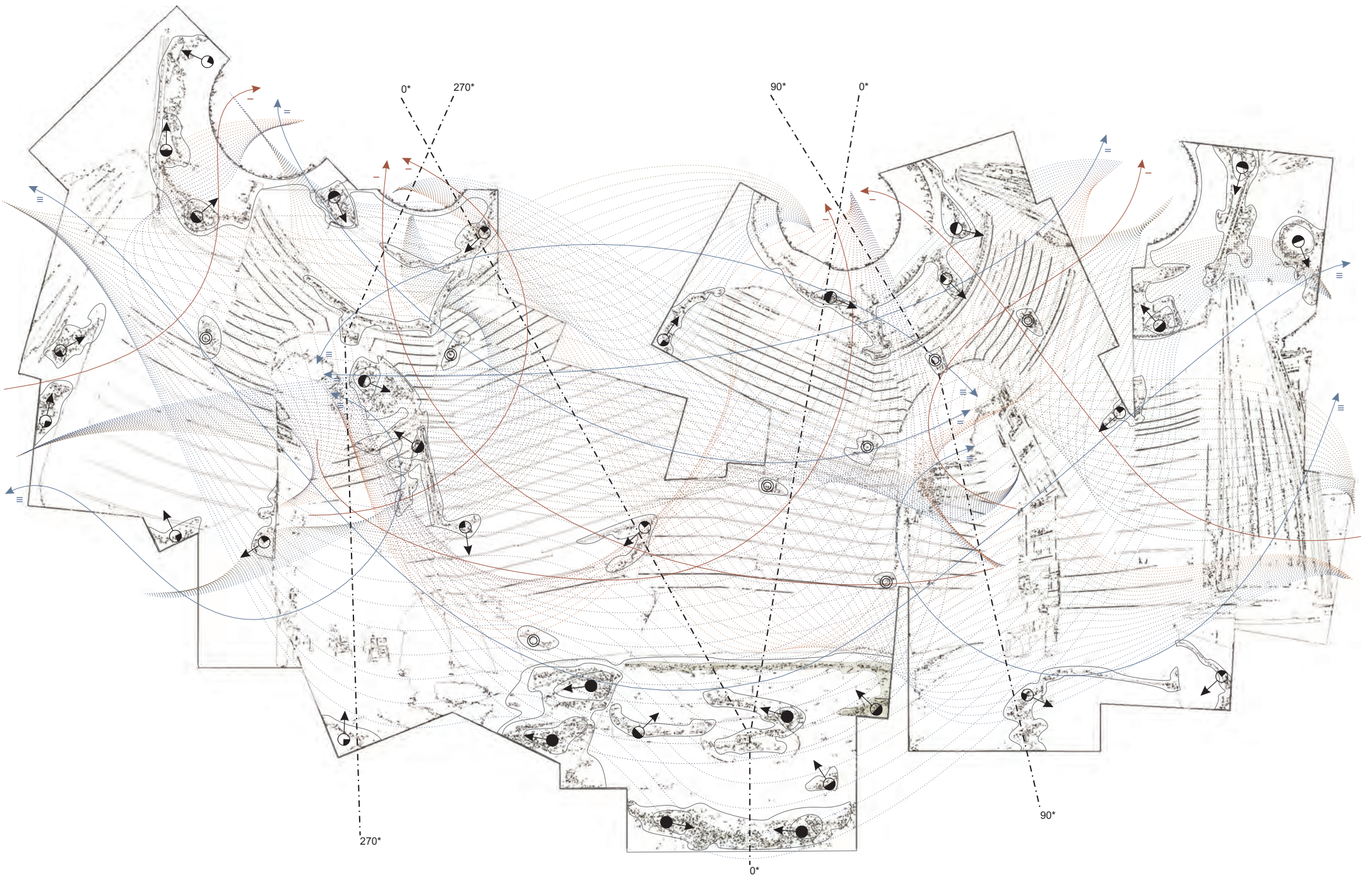
Tivoli Corner's picture number

Dusty crumbly line drawing in order to emphasize the ruinous aspect of the building and to suggest the moss propagation in Tivoli Corner





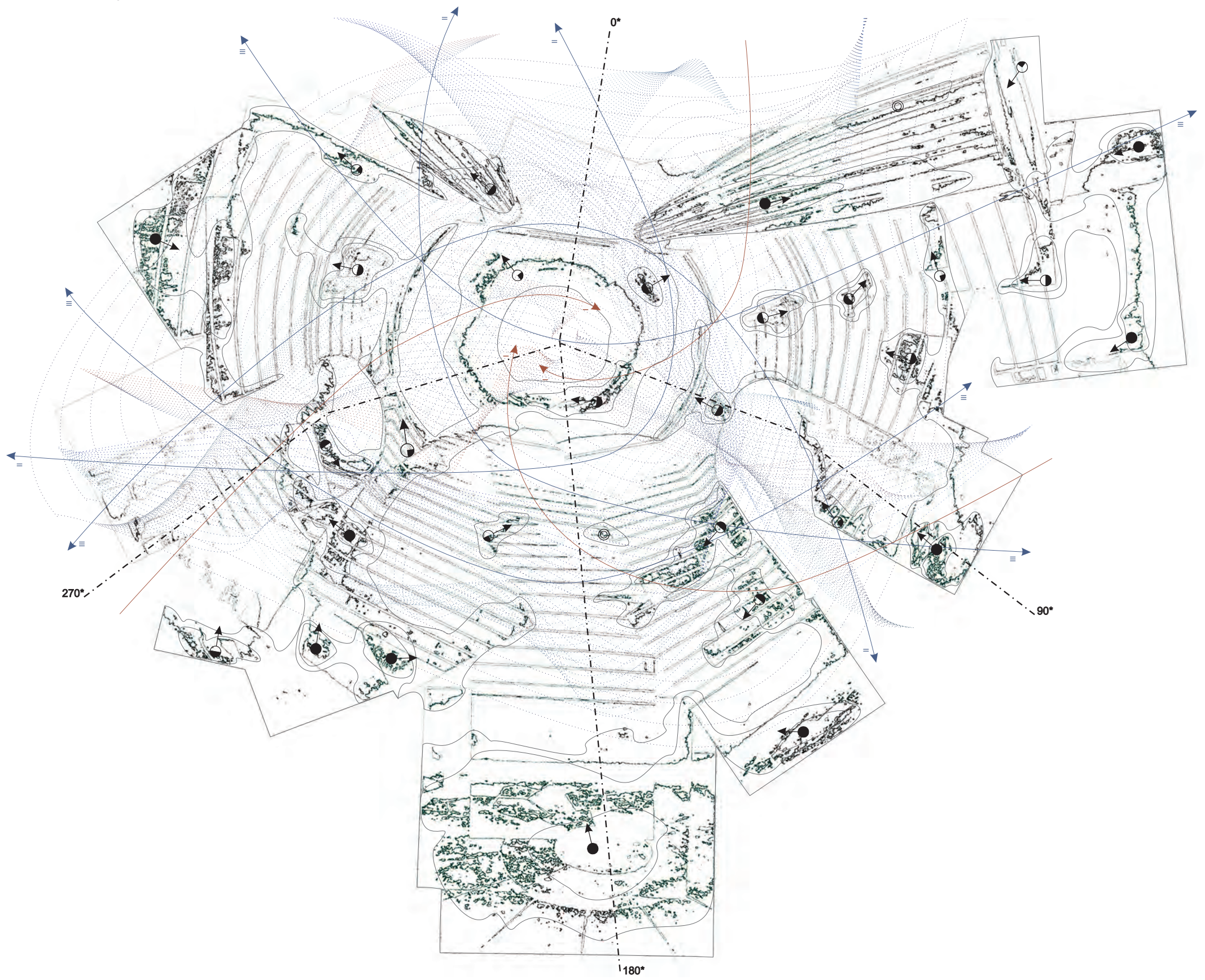
P.1.14



P.1.14 The moss forecast of Tivoli Corner for February 2004.



P.1.15

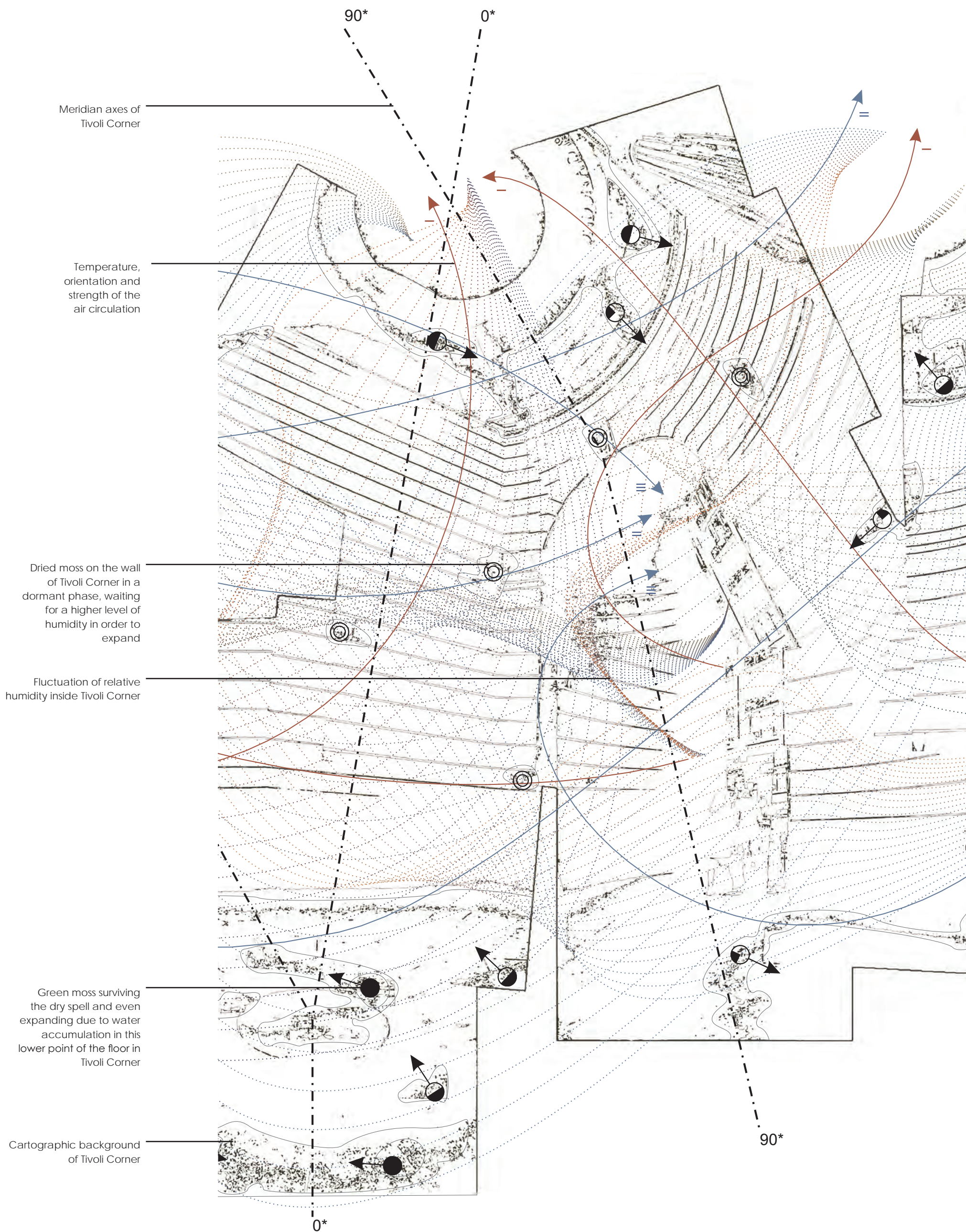


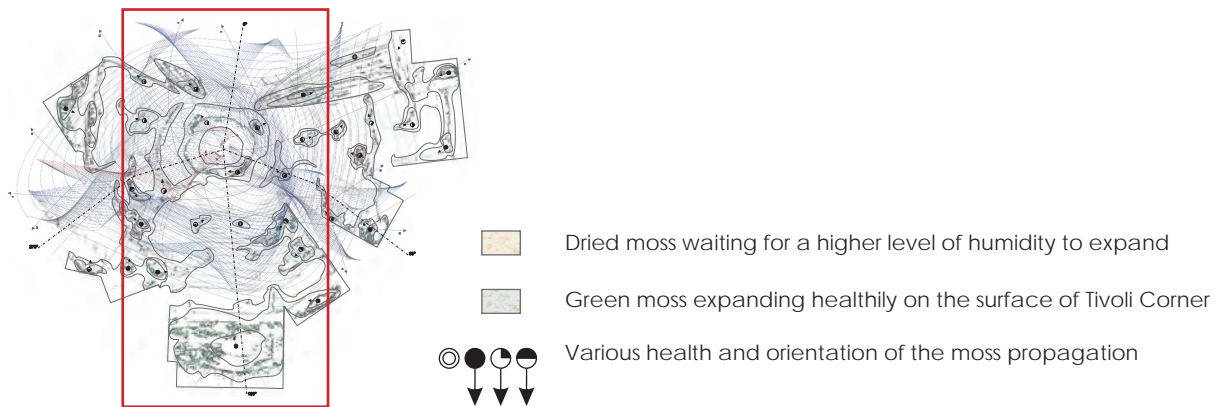
P.1.15 The moss forecast of Tivoli Corner for May 2004.



P.1.14a The moss forecast of Tivoli Corner for February 2004, detail.







P.1.15.a The moss forecast of the Tivoli Corner for May 2004, detail.

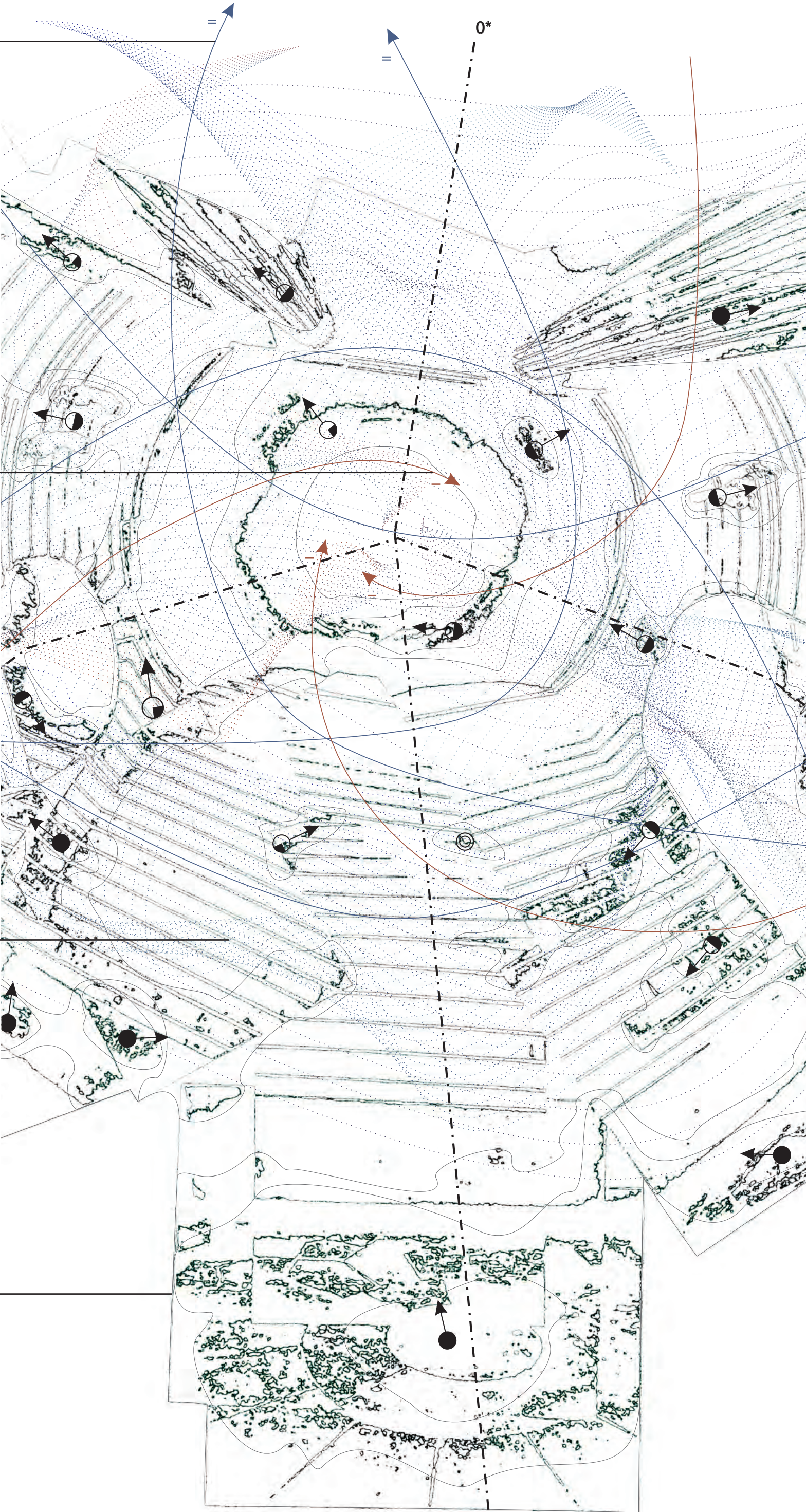


More cooler air circulation  
around the colonnade  
than inside Tivoli Corner

Warm temperature and  
slow air circulation due to  
the high level of humidity  
inside Tivoli Corner

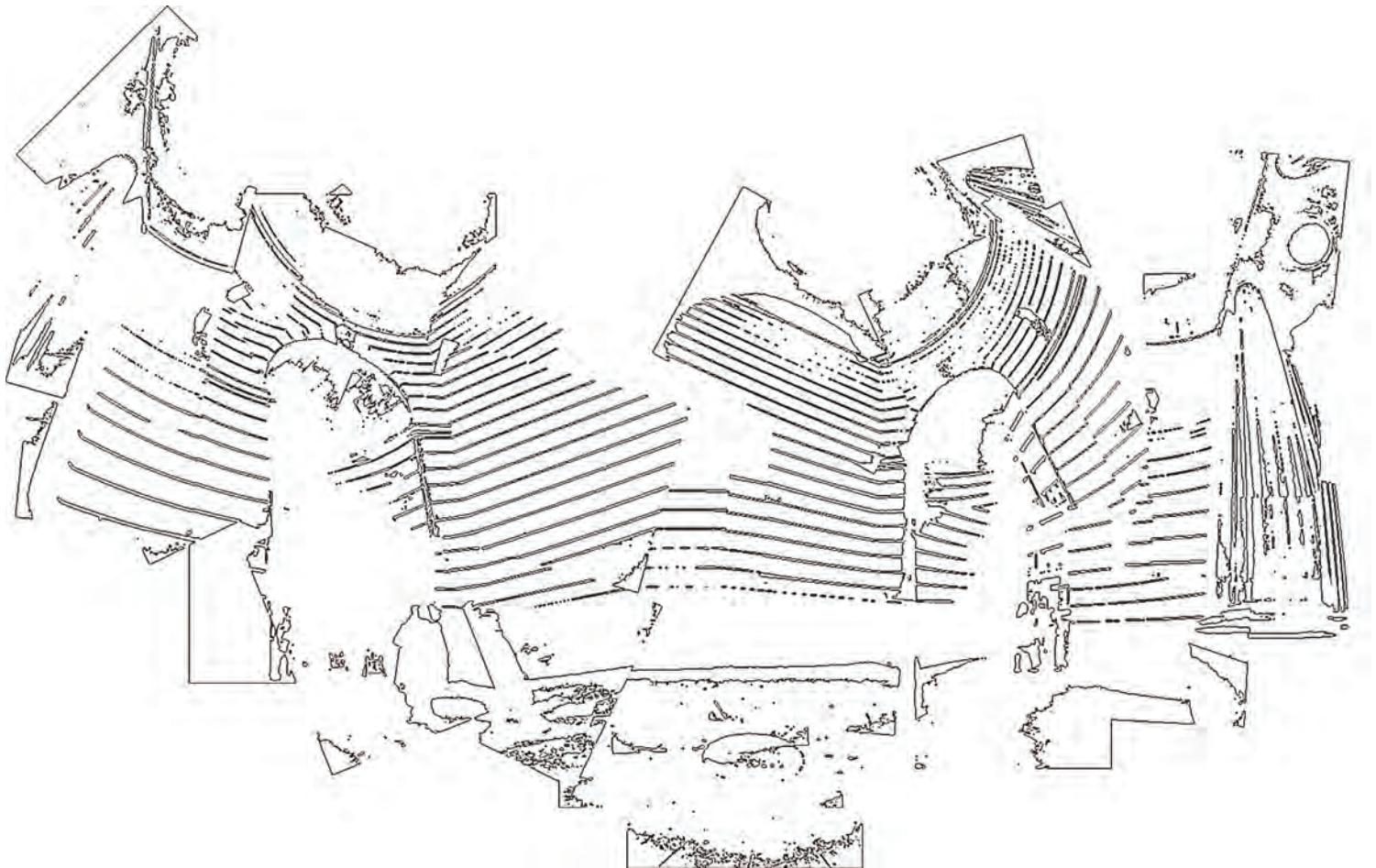
Gradual saturation in  
humidity inside Tivoli Corner

Detailed cartographic  
background indicating  
a healthy propagation  
of moss

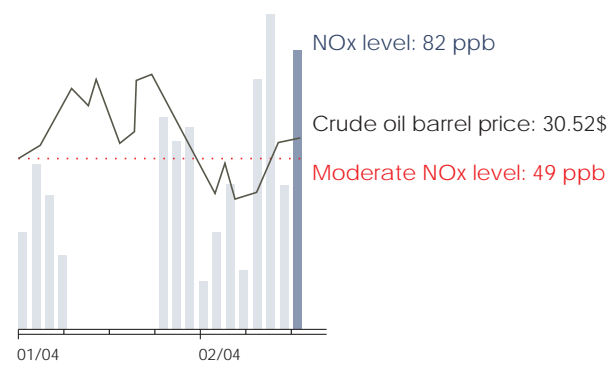




P.1.16



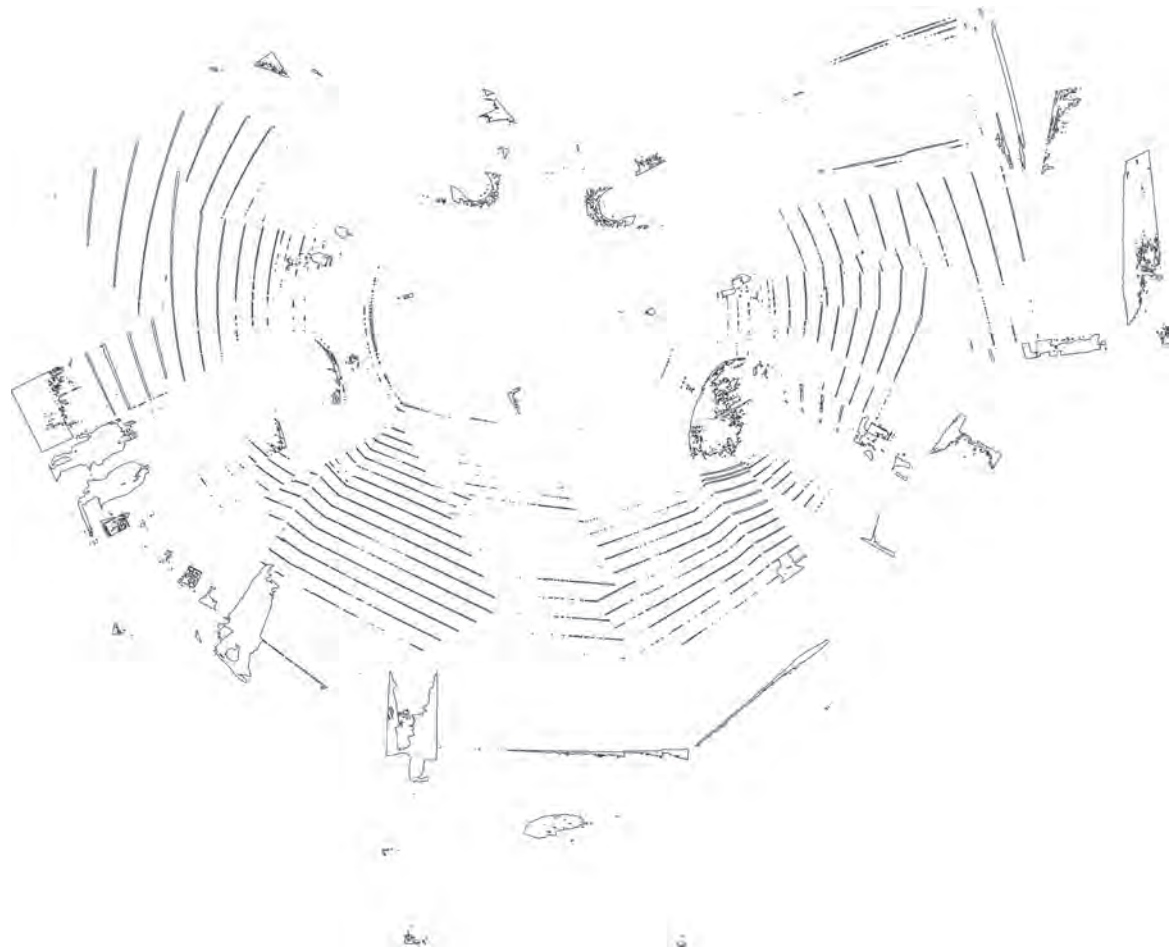
P.1.17



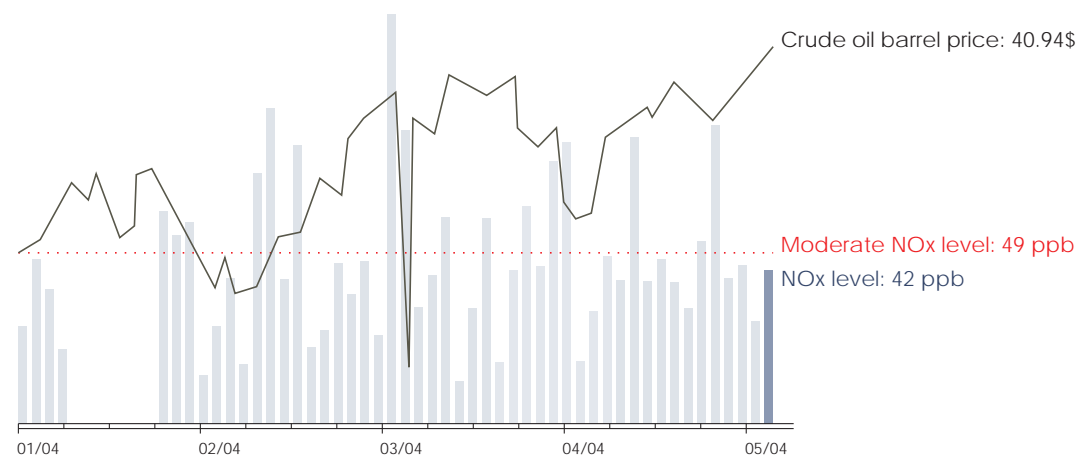
P.1.16 The clearly visible architectural outlines of Tivoli Corner indicate a regular situation at the Bank of England in February 2004.

P.1.17 Graph showing the evolution of the NO<sub>x</sub> pollution level along with the price of the crude oil barrel, from January to February 2004.

P.1.18



P.1.19



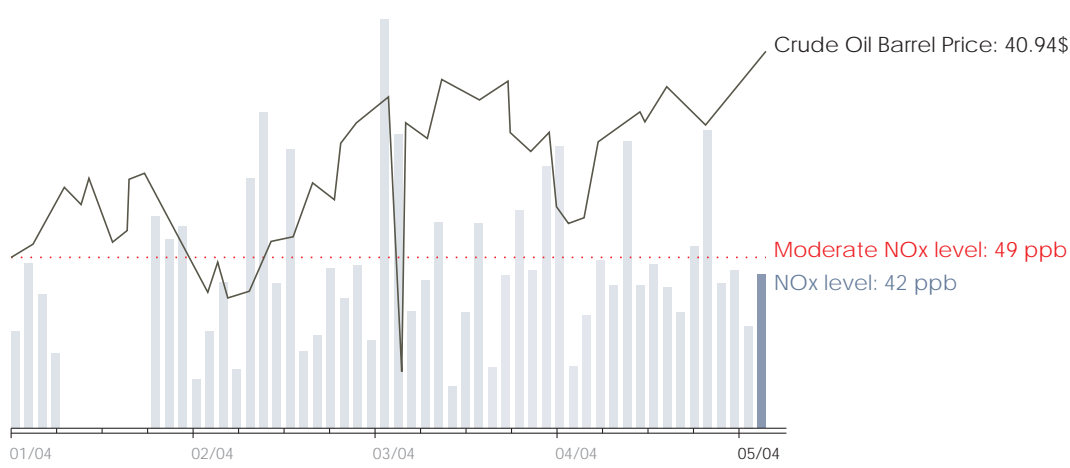
P.1.18 The pressure felt inside the Bank is reflected in Tivoli Corner by a high level of humidity and fogginess that make the Tivoli Corner's architectural outlines disappear.

P.1.19 Graph showing the evolution of the NO<sub>x</sub> pollution level along with the price of the crude oil barrel, from January to May 2004, when the price of the oil barrel hits its highest point.





P.1.19



P.1.20

P.1.21

- P.1.19** Graph showing the evolution of the NO<sub>x</sub> pollution level along with the price of the crude oil barrel from January to May 2004, based on data given by the LAQN's statistic and Platts/Comstock.
- P.1.20** LAQN's statistic for the concentration of nitrogen oxides (NO<sub>x</sub>) around Senate House for the period extending from 1 January to 1 May 2004.
- P.1.21** Platts/Comstock's graph showing the evolution of the price for the crude oil barrel (5 May 2004).

#### 4. The Bank's Barometer and the oriental void

A quote by Olafur Eliasson appropriately resonates with the oriental void in the context of the project:

The weather [is] the broadest of all sources of collective awarenesses ... its only international competition is the rise and fall of the stock market. [...] The daily stock-market update followed by the weather forecast forms a perfect (time)frame of reference informing us 'officially' that recent past [stock] and recent future [weather] belong to your now.<sup>13</sup>

The Tivoli Corner turns into a void where past decisions on the price of a barrel of oil are combined with the prediction of the future in the moss propagation, to make the present situation of the Bank of England palpable to pedestrians. In this context, the in and out interpenetration of its architectural components is transcended by its relation to time, establishing thereby a qualitative exchange between space and time. The Tivoli Corner is not bound to be read in terms of the colonnades, pedestal or formal articulation of the Bank of England. It becomes the measuring device of the pressure felt in the Bank on a daily basis, and this pressure depends on parameters evolving with time. The Tivoli Corner emerges as an indicator of current financial and environmental conditions.

The inexorable expansion-contraction of the moss coating in answer to the fluctuation of the air pollution instils the vital breath in the Tivoli Corner, bringing the whole space to life. The subsequent sensorial incidents create then a parenthesis in the pedestrian's usual routine. Fogginess and silence encountered in the edifice initiate an awakening process whereby the pedestrian, putting aside his mundane constraints, immerses himself in the surrounding environment. In so doing, time within the Tivoli Corner is set adrift as the pedestrian reaches plenitude.

Drawings of the moss forecast also present the three temporalities: the snapshot reflects the sensorial experience of now, which results from the economic and environmental past of the graphs combined with the prediction of the moss forecast in the Tivoli Corner. It is left to the viewer to let his gaze wander between those temporal diagrams and spatial panoramas in order to build up his vision of the *Bank's Barometer* using his imagination. In the process, he sinks deeper and deeper into those drawings carried along by the project, thereby letting his inner void vibrate in unison with the rhythm of the Tivoli Corner.

#### 5. Conclusion

The *Bank's Barometer* epitomizes the oriental space-time structure of the *Ma*. Indeed, the Tivoli Corner develops into a Pascalean *milieu*<sup>14</sup> between the in and the out of the Bank of England that acts as a spatial and temporal punctuation within the urban syntax of London. This is only achieved by introducing the moss both as a conceptual hyphen which connects various parameters of the project into a coherent scheme and as a material hyphen which converts temporal factors into spatial features.

The project also demonstrates the architectural tangibility of the abstract Taoist reversibility/reciprocity principle of the oriental void. The *Bank's Barometer* uses moss to emphasize the interaction existing between the site, the fluctuation of its natural environment and the ongoing financial situation. Therefore, this architectural project is no longer presented as a self-contained entity within an urban context. It becomes a living component whose design evolves following its continuous exchange with both visible and invisible conditions, defining in this manner its being in the present. In consequence, the *Bank's Barometer* transforms the Tivoli Corner into a Heideggerian built thing. It is through its gathering void that the Tivoli Corner becomes a thing, a barometer that physically and mentally engages with man in his daily life.

In the continuation of the application of the key Taoist principles in architectural design, the next project intends to work with the interiorization process of the oriental void as a design incentive. In this case, evocative potentials of moss and sound are exploited to underline the ongoing dialogue between the site and its user.





## 2

### Sited Moss: Invading or Fading Architecture?

In the course of summer 2004, Jane Rendell and Penny Florence organized a site-specific conference entitled 'The Slade/Bartlett Summer Event 2004: "(Dis)Locating Specificity"'. Participants were asked to choose a site on University College London's main campus to create a 'session that uses it in some way beyond a simple container'.<sup>1</sup> The conference was to be presented on 17 September 2004 while any artwork or installation was requested to be exhibited for a two-week period. I took this opportunity to implement the oriental void's interiorization concept in an installation named *Sited Moss: Invading or Fading Architecture?* made at the William Wilkins Portico located in the Main Quad of the university.

As a reminder, Chinese landscape paintings referred to the existence of a fifth dimension which enabled the viewer to break free from the picture frame in order to transcend its space-time structure. This was achieved by fully plunging the viewer into the depicted landscape by means of blank spaces left on the canvas. Those gaps interrupted his contemplation of the painting by generating an awakening which brought back the gaze within the viewer. The depicted landscape resonated then in his mind to create a new mental image that he projected further back into the painting: the interiorization process. In architecture, the latter was realized by stimulating memory, emotions and thoughts but also by introducing multiplicity and incompleteness to the site. The user then interpreted and completed the ensuing space with his imagination, thereby investing space both physically and mentally.

In this context, the installation dealt with the interiorization process by exploring the dynamic exchange between a site and its user. I collaborated with Nadia Mounajjed, a PhD candidate at Sheffield University, who explored the individual's sensorial and memorial experiences in the course of different architectural installations. We drew on the evocative potential of moss and sound to create different frames of time and space, akin to the ones encountered in the unrolling of a Chinese landscape painting.

#### 1. The Portico

The Portico is the principal entrance to the Main Building of University College London, designed by William Wilkins in 1827 (fig P.2.1). The Portico intimidates by its sheer scale and its strategically elevated position accessed by a set of prestigious stairs. Its classical architecture, featured in components such as the Corinthian colonnade, entablature and

pediment, embodies order, taste and morals, values that are symbolically looked up to by a user standing at the bottom of the stairs.

The Portico also constitutes a firm and distinct point of reference for freshly enrolled students who will regularly come to use the space in the course of their time at UCL. Grade I listed, the Portico is today an emblematic edifice of the university, which takes great care in preserving it from harm and natural decay. It ultimately resists the test of time by giving its name to the online portal of UCL administrative services, which enables students and staff to directly manage data and courses on the Internet. The Portico belongs, then, to the collective memory of UCL students and staff alike.

Nowadays, the Portico's entrance doesn't operate on a daily basis, as its oversized doors only open for special events. Therefore its space generally appears bare, inert, without a particular purpose to fill. This feeling of emptiness is enhanced by the silence of the blind entrance wall as well as the presence of five wooden chairs and two litter bins whose scale contrasts to the room's colossal volume. In this context, the Portico's space easily goes unnoticed by its user, absorbed in his reading, conversation or contemplation of activities happening outside the colonnade (fig P.2.2).

## 2. Principle of Sited Moss

### 2.1 The Portico as a spatio-temporal portal

*Sited Moss* intends to awaken the user's consciousness of the Portico's space and question the Portico's symbolic and perennial image by tracing evidence of its understated ageing process. Those signs are mostly perceptible on the Portico's floor despite regular maintenance by the UCL authority. They result from various types of inhabitation, reflected in the shifting of chairs and handling of catering equipments or heavy brush sweepings, but also from natural erosion due to weather conditions.

Moss is then introduced to map those floor deteriorations and make them visible in order to generate an awareness of the Portico's vulnerability. The site's subsequent ruinous vision raises diverse emotions such as melancholy, serenity or apprehension, but also reminiscence of landscape paintings, ruins or gardens formerly experienced by the user. In this respect, moss acts as Chinese landscape painting's blank gaps, metaphorically displacing the current space-time structure into another dimension defined by the user's imagination. The Portico appears thereby as a spatio-temporal portal to its user's memory and imagination.

### 2.2 The Portico as a spatial palimpsest

Additionally, the user's awakening to the Portico is enhanced by exploiting auditory features which give information on what he can't see. Breathing, walking, laughing and whispering sounds intrigue him as their familiarity finds an echo within his inner core. His own breathing and walking rhythms are remembered along with those moments he spent laughing or whispering in this place. He then relates those sounds to the budding social occupation of the Portico, before suspecting the source of all those sounds as maybe being the Portico itself. Intimacy is thereby established between the site and its user via the sound. This connectivity nurtures the user's imagination which, by way of association and deduction, generates a personal narrative or interpretation of the space. In this manner, the Portico transpires as a receptacle for disparate individual memories and imagination that relentlessly re-define its space. The sound's waving intonations, then, enable the user's gaze to drift between the space ruined by moss, the actual space and his projected imaginary space. All these facets set an ambiguity regarding the time, space and nature of the current experience, transforming thereby the Portico into a sort of a spatial palimpsest.

## 3. Installation

### 3.1 Moss mapping and sound equipment

As a UCL student, I experienced the Portico in its various forms throughout the year, as a meeting point, observation platform, lunch spot, background to festivities, cocktail reception area, study space, resting place ... For a month, Nadia and I repeatedly held our project's discussions in the Portico, which gave us the opportunity to observe the spatial occupation at different hours of the day. We noticed that the site was divided into three zones associated with specific activities. Its outer periphery offered a convenient observation platform for monitoring activities happening in the surrounding square. It was mostly invaded by solitary individuals who primarily came to eat, read, rest or simply enjoy the sun. When small groups of two or three people entered the space, the Portico's outer corners were chosen to have quiet conversations, undisturbed by the circulation around the entrance stair. Larger groups often sat directly on the floor and inhabited the median parts of the space, slightly leaning towards edges at times to catch precious rays of sunlight. In each case, users' conscious movements, such as displacing chairs around the space, or unconscious behaviours, like mutilating

P.2.1

P.2.2



P.2.1 William Wilkins, *The Wilkins Portico* (1827), University College London, London.

P.2.2 Users oblivious to the Portico's interior space.

the floor with a pen during a conversation, left indelible marks to be remembered by the building.

In this respect, floor abrasions were categorized into three groups then respectively mapped with a particular type of moss: superficial scratches were covered by sheets of dried-frail sphagnum moss (fig P.2.3); deep, isolated punctures by bun-cushion moss (*Leucobryum*) (fig P.2.4); water channels and surfaces eroded by rain by patches of rich green fern moss (*Thuidium*) (fig P.2.5). Each of these correlations was motivated by the amount of water available for the moss's survival in those crevices. By slowly colonizing the space in that manner, moss actively participated in the decaying process of the Portico, which in turn, favoured the moss's propagation. Fragile moss sheets were located towards the back wall, corresponding to the large group's sitting zone and to the litter bins' displacement by cleaning staff (figs P.2.3a–b). Bun-cushion mosses mostly dotted the area along the colonnade where the users' occupation reached its highest level (figs P.2.4a–b). Fern mosses highlighted zones prone to humidity and holes in the pavement's joints, emphasizing the water evacuation diagonals of the floor pavement (figs P.2.5a–c). They were also wrapped around the legs of chairs to suggest the passing of time (fig P.2.5d). The resulting moss mapping unveiled the ongoing geographic distribution of social activities and highlighted the stone pavement's puzzle pattern which disrupted the former visual continuity of the floor (figs P.2.6–11).

In practice, the Portico was booked from 14 to 26 September after some reticence from UCL's Rooms Booking Service, which necessitated Jane Rendell's intervention. The Booking Service had some reservations about an installation that could possibly damage the current state of the place. It was particularly restrictive regarding fixings to any part of the Portico, limiting them to acid-free archival tapes. Furthermore, there was not enough time to cultivate mosses directly on site; they were therefore bought in from the New Covent Garden Market instead. As they could not be pinned or glued straight to the floor, another method was devised: mosses were soaked in water to maintain their moisture and nutrient levels as well as to give them weight that would keep them in place when forcefully encrusted in the floor's joints and crevices. After two days, some reacted well by attaching themselves to the cracks' irregular surfaces; others were simply brushed away by wind. Owing to the unstable weather during the preparation days, missing mosses were regularly replaced in a Sisyphean manner until the presentation day.

The interactive sound system was installed the morning of the presentation for security reason (fig P.2.12). It was placed in the south-west corner of the Portico, where students gathered the most. The sensors of a simple motion detector were positioned so as to draw an invisible perpendicular line to the back wall of the Portico. A user crossing this imaginary line activated the audio equipment connected to two speakers located behind a column. The resulting sound was subdued as it was emitted in an open space, yet it was loud enough to catch the user's attention and plunge him into a meditative state.

### 3.2 Users' reactions

Despite the intervention's modest scale, the overall perception of the Portico was significantly modified in the eye of its users, as seen from the miscellaneous reactions of students, staff and guests alike during the three days of preparation. In fact, a cocktail reception unexpectedly interrupted our work in the late afternoon of 15 September. The Portico's doors were wide open and the UCL catering services brought out tables along the blind wall. Though momentarily perplexed, the staff rushed back to their work unabashed by the presence of moss. As more and more guests invaded the space, Nadia and I worried about the possible disastrous outcome for the installation. Asked to leave the place, we were gathering our materials, buckets and plastic sheets when an elderly guest came to compliment us about the change in mood of the space and how those mosses made him feel as if he were somewhere else ... Most mosses surprisingly survived the crowd that evening, which suggested that guests were made conscious of the floor.

A few students grew curious about the sudden apparition of mosses, timidly touching or smelling them. It also affected their behaviour as they moved chairs around by lifting them instead of dragging them across the floor. Their gaze turned from looking outside to lingering on the view inside the Portico. One of those students told us that he doubted the place would crumble into ruin as it would be continuously maintained by the university. In fact, the two cleaners from the UCL Maintenance Service, in charge of the Portico, were troubled by our request to leave the space's floor uncleaned during the ten-day period of preparation-exhibition. On the one hand, they were afraid of being accused of negligence by superiors, and on the other hand, they thought that the mosses wouldn't be easily removed, requiring extra working hours. As for the sound installation, it perplexed users at first: upon hearing the laughing, breathing or whispering noises, they instinctively looked around



P.2.3



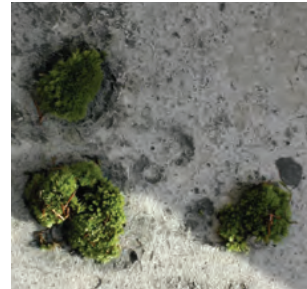
P.2.3a



P.2.3b



P.2.4



P.2.4a



P.2.4b



P.2.5a



P.2.5



P.2.5c



P.2.5d



P.2.5b



**P.2.3** Dried sphagnum moss covering surface scratches.

**P.2.3a** Dried moss sheets towards the back wall of the Portico.

**P.2.3b** Dried moss trailing a path left by the bin's displacement.

**P.2.4** Bun-cushion moss covering deep puncture damages.

**P.2.4a-b** Bun-cushion moss along the colonnade.

**P.2.5** Green fern moss covering broken joints in-between stone pavements.

**P.2.5a-b** Green fern moss covering the water channels of the Portico's floor.

**P.2.5c** Zone of humidity around a column.

**P.2.5d** Moss around the chair's legs suggesting an abandoned chair and hinting thereby to the passing time.

for people making those sounds. When realizing the real acoustic source, the users' gaze drifted back to their imagination. Feedback received on the presentation day suggested that more moss could have been used to fake the passing of time as was already done by the accumulation of moss around some of the chair legs (fig P.2.5d). Indeed, moss could be gathered in curious patterns unrelated to floor joints or scratches so that users had to speculate on their intriguing origin. Overall, responses were positive during the preparation and presentation of the installation as it finally fulfilled its original intentions.



P.2.6



P.2.7



P.2.8



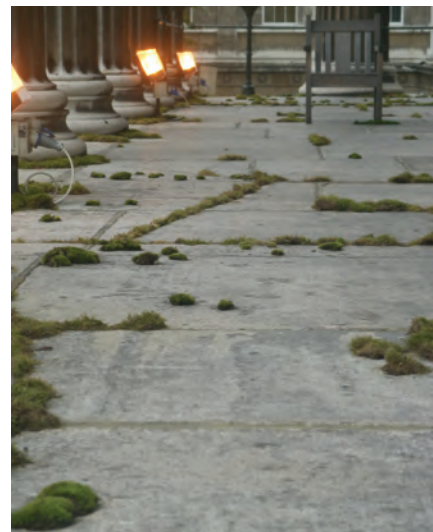
P.2.9



P.2.10



P.2.11



P.2.12



P.2.6 View towards the south corner of the Portico.

P.2.7-9 Visual disruption of the pavement due to the presence of moss.

P.2.10 View towards the north corner of the Portico.

P.2.11 View along the colonnade of the Portico.

P.2.12 Interactive motion-sound equipment.

### 3.3 Drawing as memento

*Sited Moss* was directly conceived on site, through discussions and hands-on experiments regarding moss and sound. We wanted to record through pictures and video the users' reactions during the exhibition period, but the installation was completely brushed away by the cleaning staff on the evening after the presentation (fig P.2.13). In consequence, the drawing came afterwards, as a memento of the installation. The aim was therefore to depict its procedure, report the ongoing decay of the Portico's floor in relation to its occupancy and convey its sense of emptiness which could then be filled by the viewer's thoughts. It was built on values drawn from the previous project, which allied a cartographic background, depicted by an evocative line drawing, and the moss forecast, expressing the moss propagation in relation to weather components.

The panoramic view of the Portico's floor formed the cartographic background on which was drawn the plan of the Portico's pavement following dimensions measured on site (fig P.2.14). This superposition was made to emphasize the ruinous texture of the floor and set the viewer's imagination in e-motion. The cartographic background is knowingly rendered larger than the Portico's plan in order to echo the viewer's personal horismos that extend beyond the physical boundaries of the place. Chairs and bins found on the first day of the installation were also located on this drawing as a manner of providing a scale for the site.

The intervention plan of the installation mapped the existing floor deteriorations with moss as on the installation (fig P.2.15). The three types of floor abrasion mentioned earlier were represented by the moss's elongated, punctual and stretched shapes as well as by its colour range from blue-green to ochre which indicated the wetness of the moss. The interiorization plan also served to locate the sound equipment.

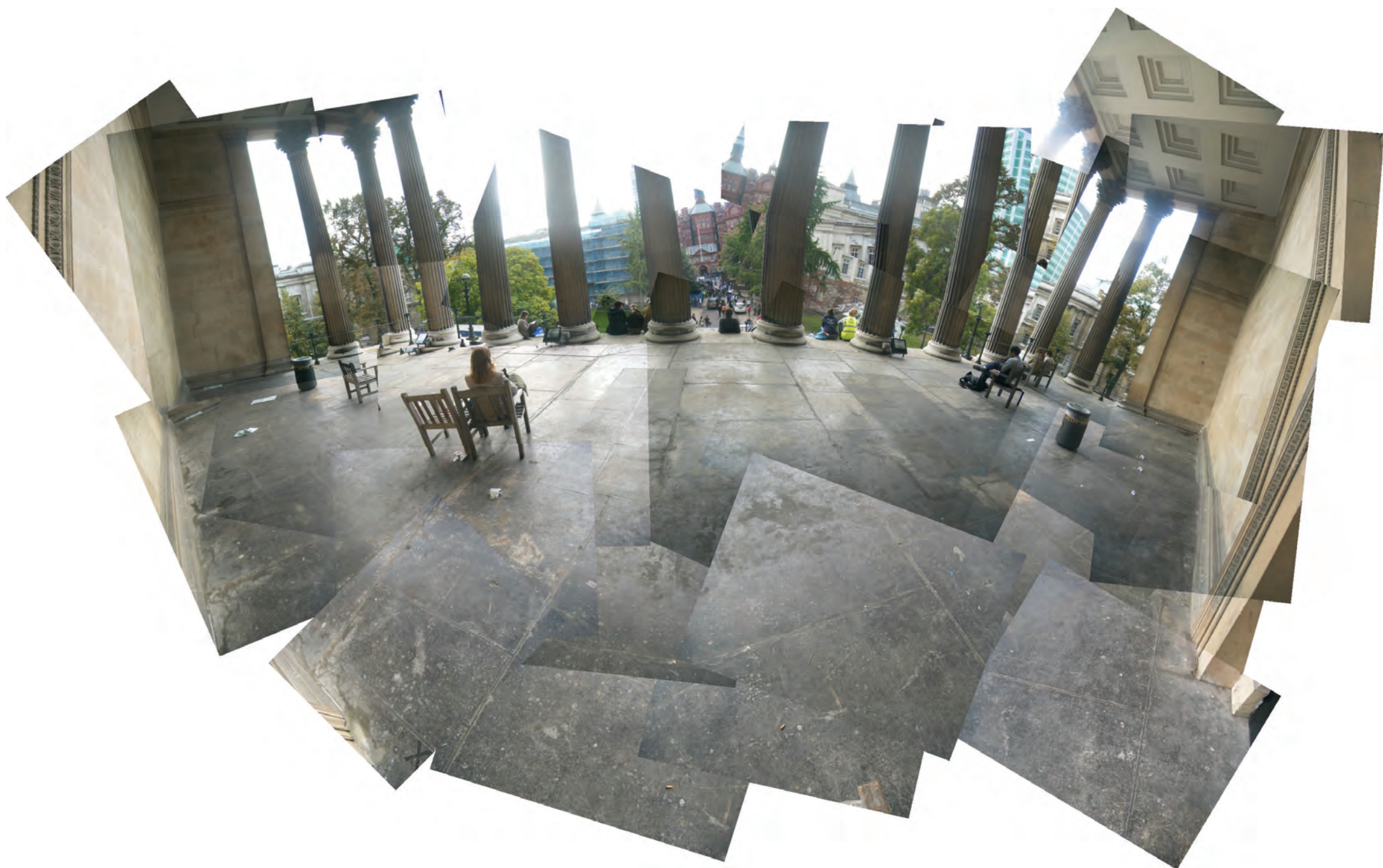
These two drawings were then combined with the moss forecast of the previous project in order to create the Portico's interiorization plan (fig P.2.16). In addition the earlier moss mapping, this plan recorded the flowing of time through the constant displacement of furniture by the Portico's users during the period of the installation and through the whimsical moss arrangement conceived in response to the remarks made on the installation (figs P.2.16a–b). Unlike the other moss patterns of the project, this moss formation didn't follow a particular gap on the floor and branched off into thick, curvy, protruding arms extending between the stairs and the doors of the Portico. This configuration suggested a moss accumulation caused, for instance, by a possible leak from the

Portico's roof or by a now extinct activity, purposely undefined to titillate the viewer's imagination. The interiorization plan also served to define non-visible data such as the sound propagation area with concentric dotted curves (figs P.2.16c). Red dash-dotted frames delimited zones prone to occupation in relation to the number of users. Those frames were then filled with words illustrating that area. Here, words were chosen over pictures for their ability to induce, rather than impose, an imagery that belonged only to the viewer. These zones could also be connected to the floor abrasions and the subsequent moss distribution in the Portico. This method of graphically overlaying information on the drawing aimed at creating an experience analogous to the installation. In the manner of picturesque gardens and oriental architecture, the visual busyness of the final drawing was to induce the viewer's imagination and awaken his consciousness of the site. Like the blanks left on the canvas of Chinese landscape paintings, this visual density intellectually and emotionally engaged the viewer's mind in the interiorization process advocated by the oriental void.

In a way, the act of drawing could also be perceived as a personal interiorization process of the site since the drawing was composed following my recollection of the Portico, my site survey and my vision of the installation combined with the feedback heard on the presentation day. Yet those personal features were blurred in the drawing's incomplete and fading lines as well as in its diagrammatic representation that established a distance between my awareness of the space, the actual space and the space grasped by the viewer's mind. By doing so, the Portico's interiorization plan, and by extension the installation, was made accessible in its wholeness by involving the viewer's interpretation.

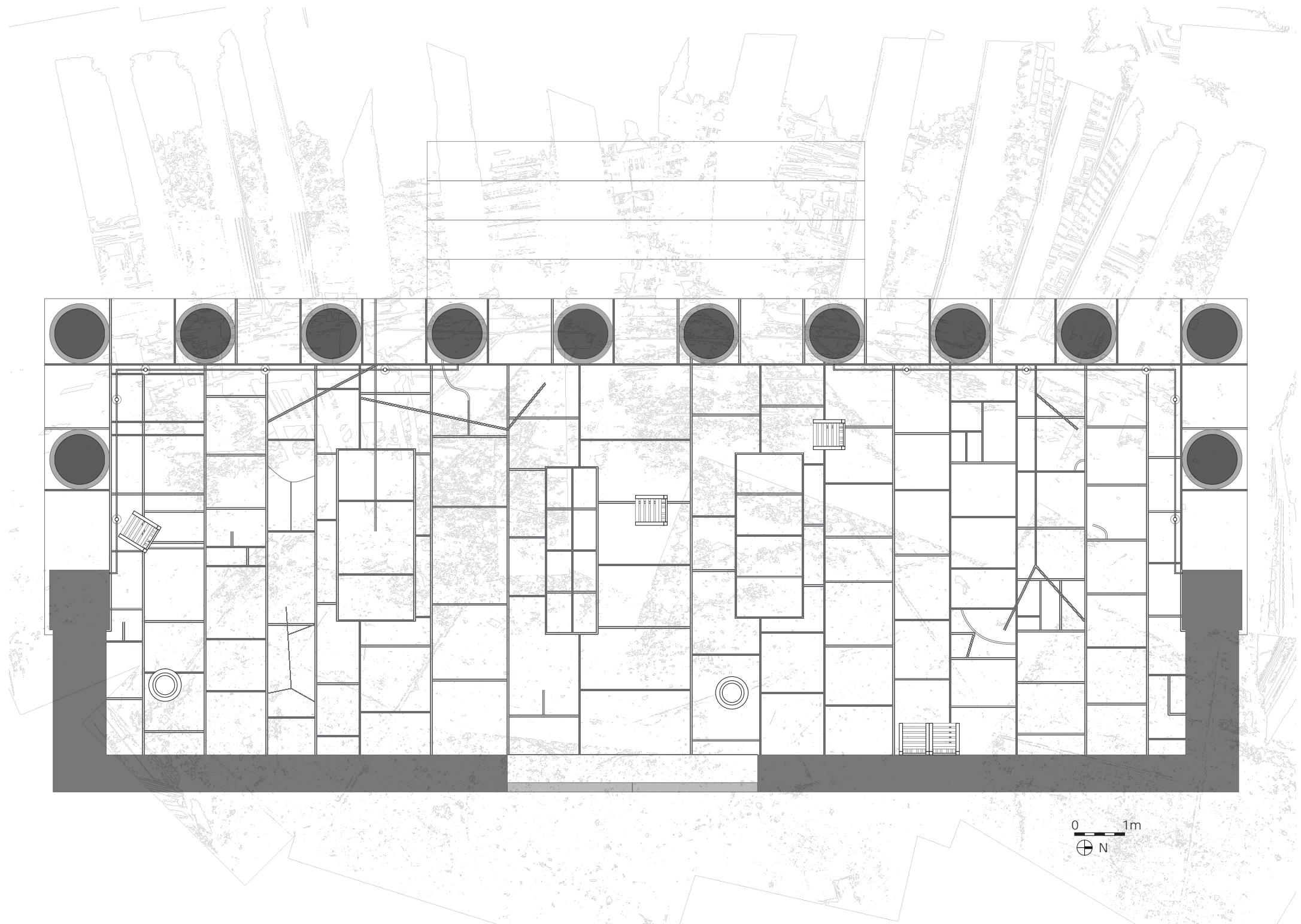


P.2.13



P.2.13 View of the Portico's floor the day after the presentation.

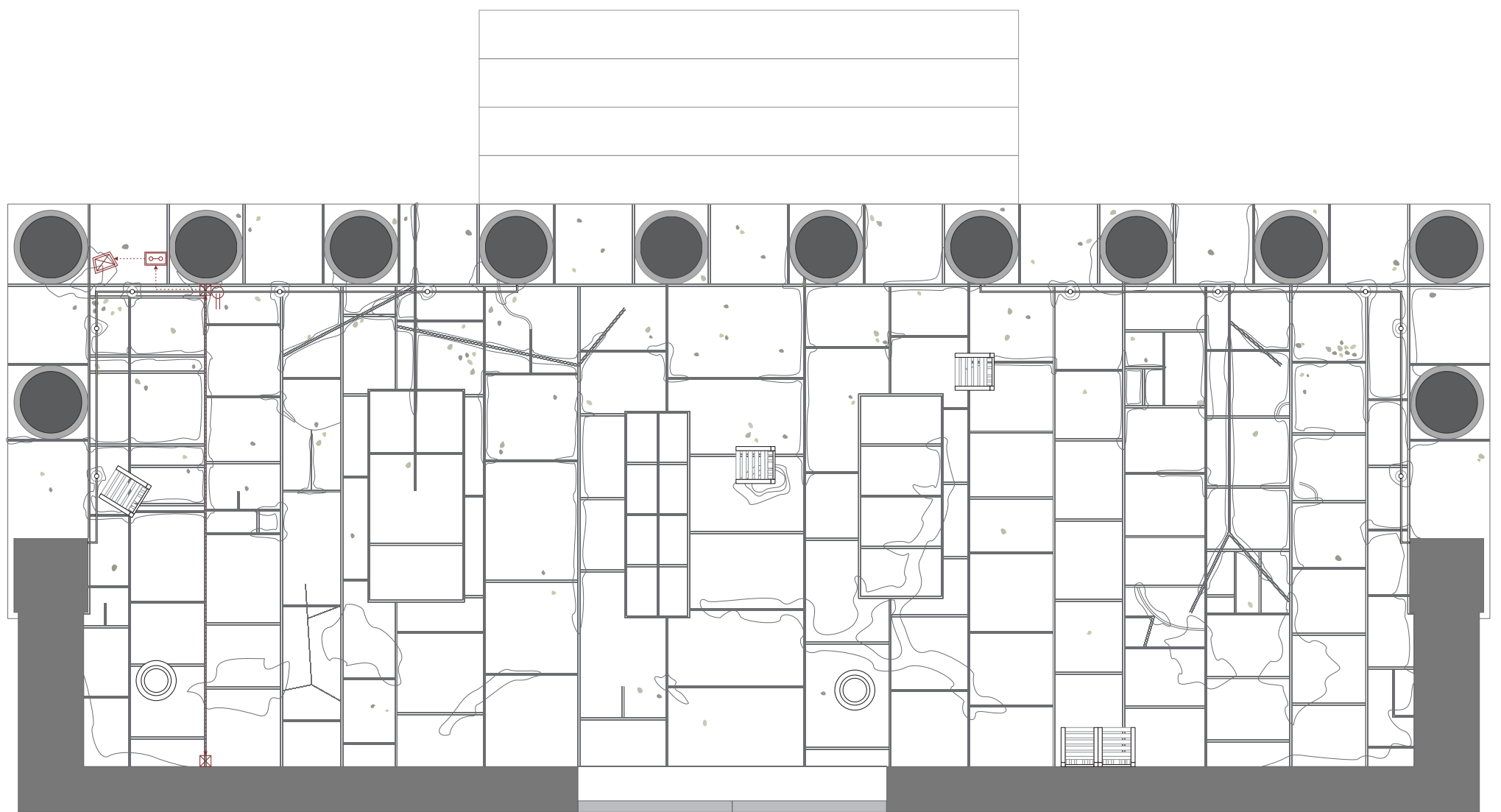
P.2.14










P.2.14 The Portico's plan drawn according to measures taken on site, layered with the cartographic background of the Portico's floor pavement.

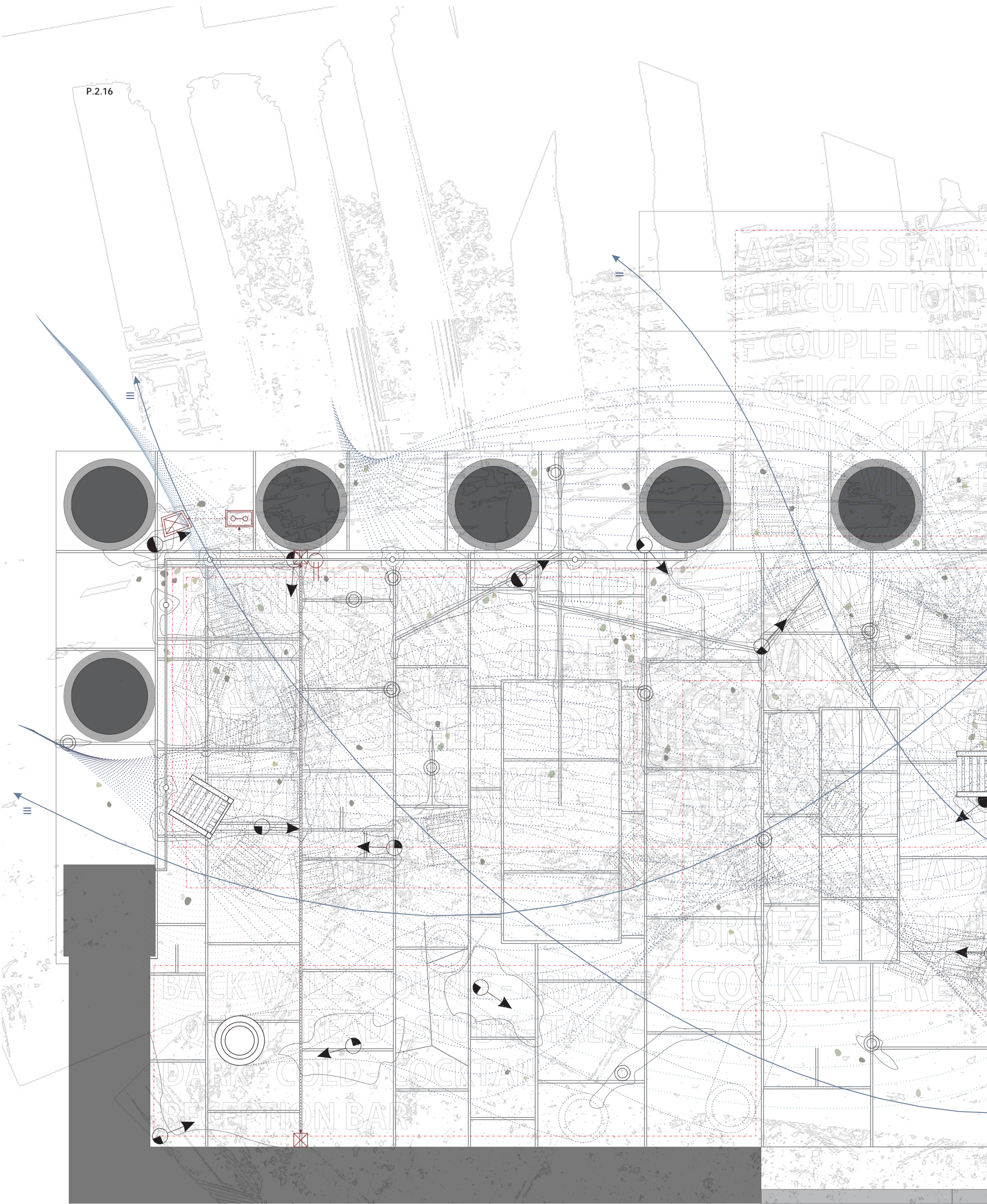


P.2.15

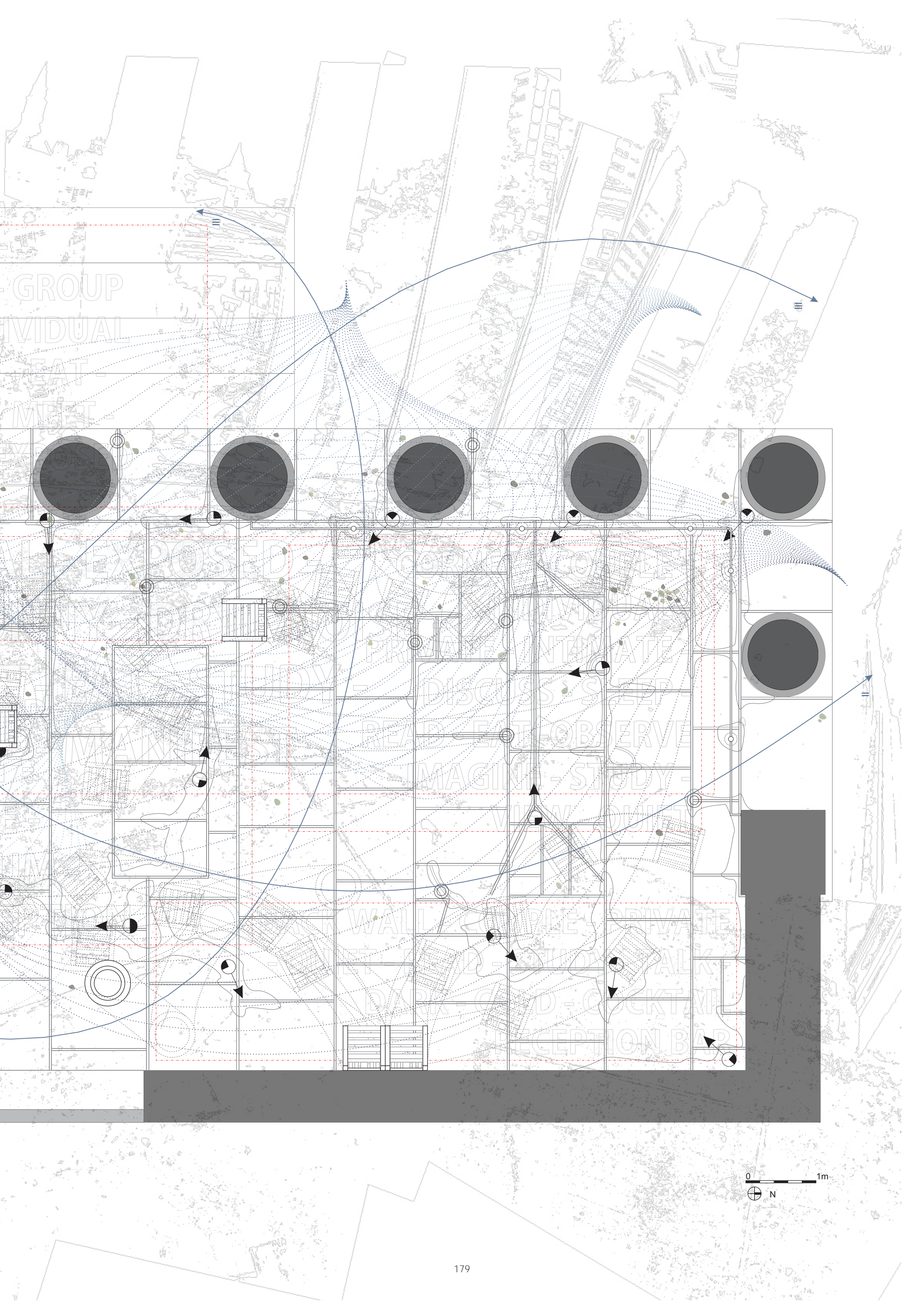


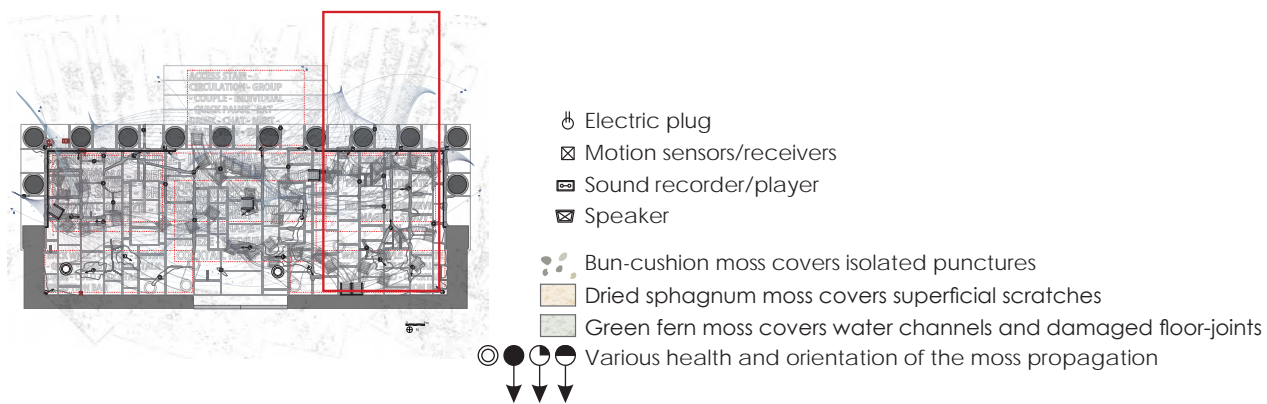
-  Electric plug
-  Motion sensors/receivers
-  Sound recorder/player
-  Speaker
-  Bun-cushion moss covers isolated punctures
-  Dried sphagnum moss covers superficial scratches
-  Green fern moss covers water channels and damaged floor-joints

**P.2.15** The intervention plan of the installation describing the moss mapping and the location of the sound system.









P.2.16a Interiorization plan, detail-1.



Bun-cushion moss covering puncture damages on the floor

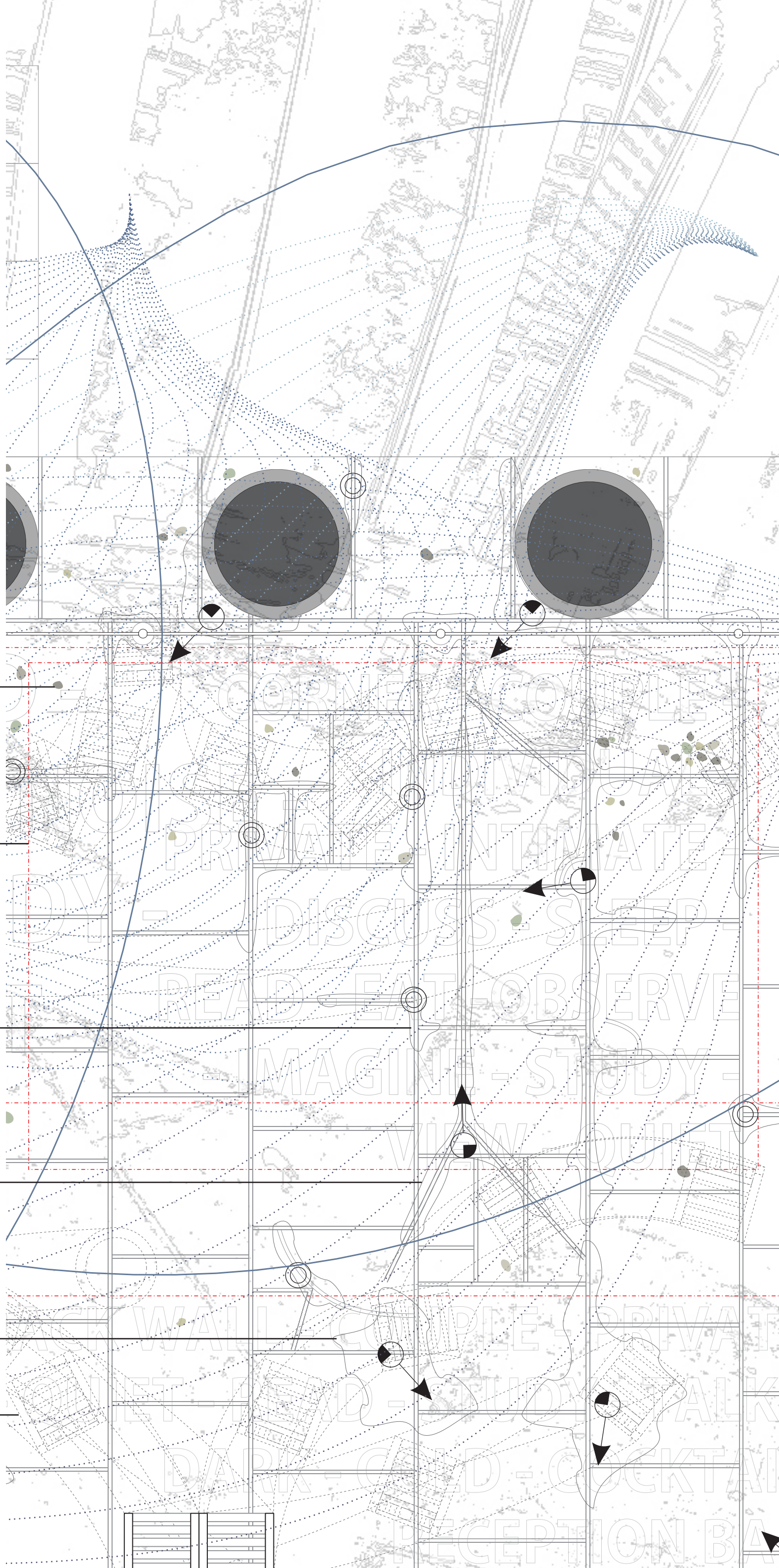
Boundaries defining various types of spatial occupancy in relation to the users' group size

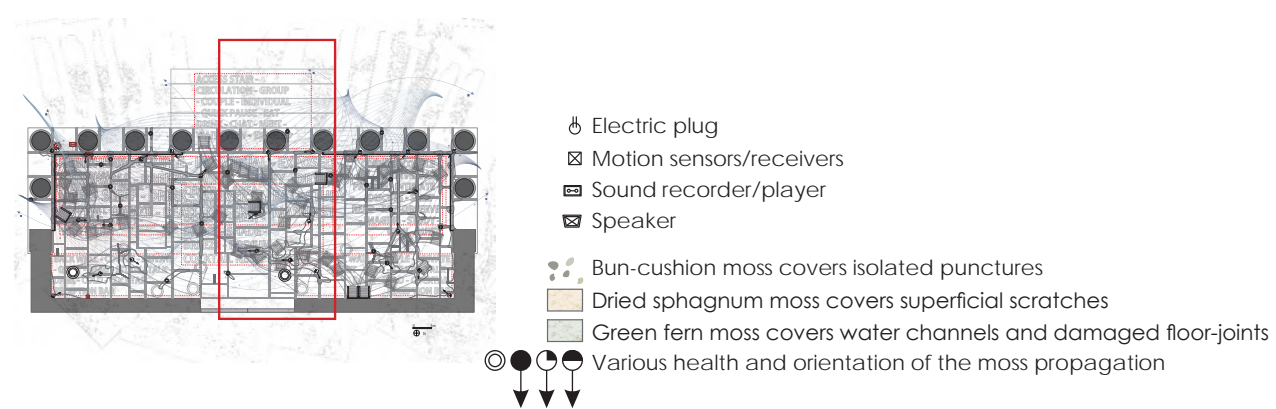
Fern moss covering crevices in-between stone pavements

Fern moss covering water evacuation channels

Dried sphagnum moss covering the light scratches on the stone pavement

Displacement of chairs and bins by various users during the preparation of the installation





P.2.16b Interiorization plan, detail-2.

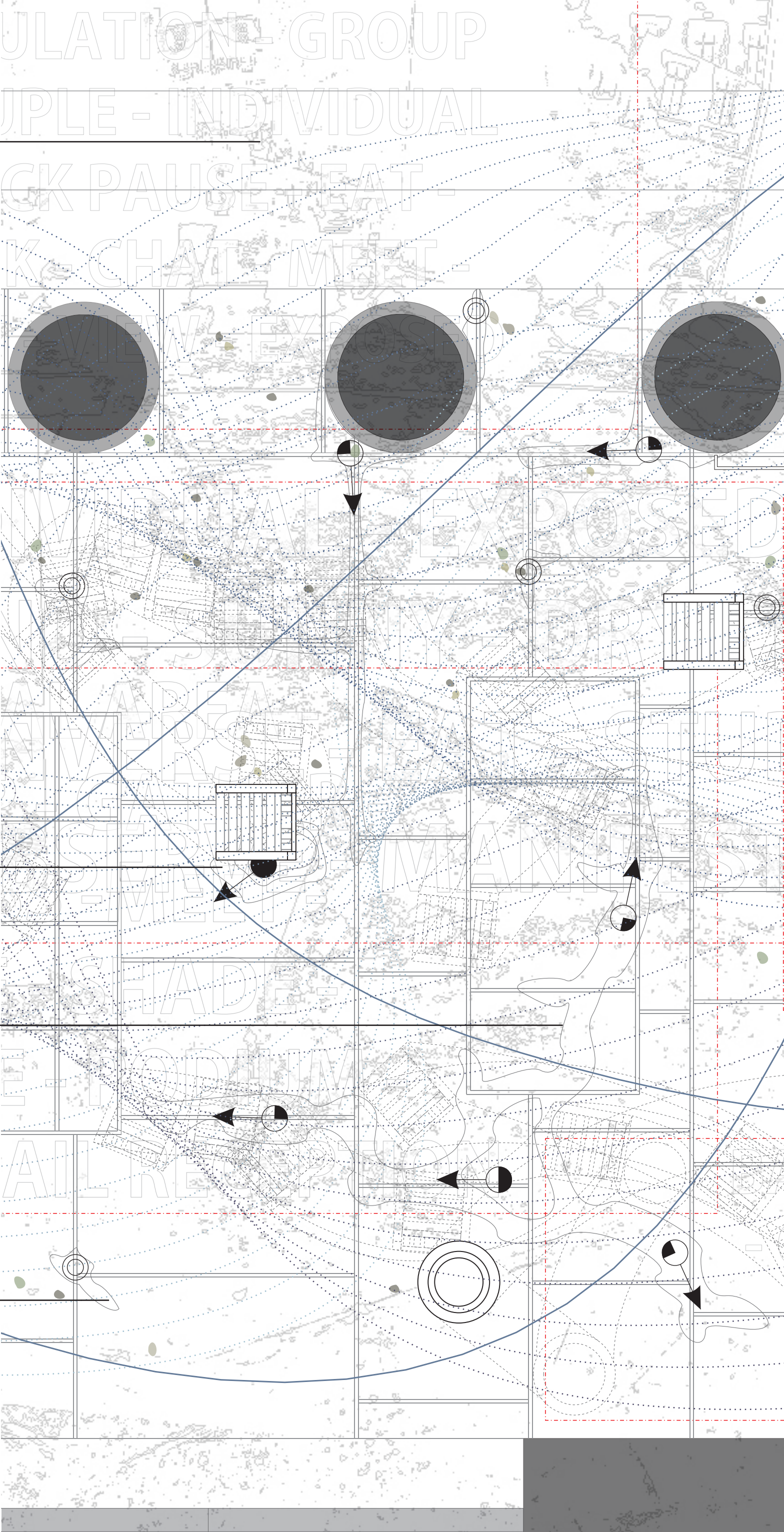


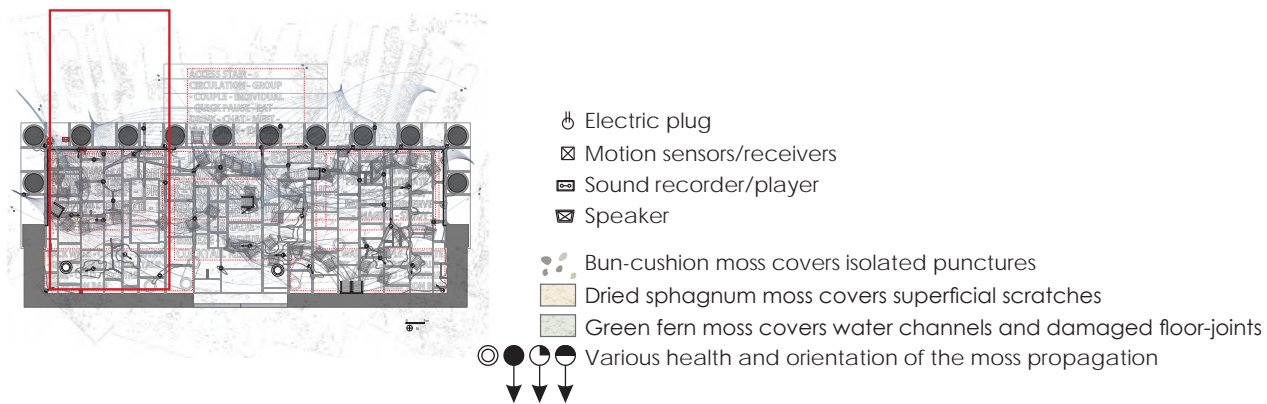
Cartographic background  
of the Portico

The accumulation of  
fern moss around the  
chair's leg suggesting the  
passing time

Whimsical moss  
arrangement suggesting  
an invisible accident/  
event/natural phenomenon  
that titillates the viewer's  
imagination

Dried sphagnum moss  
covering scratches left  
on the stone pavement  
by the Portico's heavy  
entrance doors





P.2.16c Interiorization plan, detail-3.



[illegible][illegible]

Architectural floor plan of a building, likely a residence or a small commercial building. The plan features a central courtyard with a fountain and a large circular area at the top, possibly a dome or a large hall. The building is divided into several rooms, including a 'RECEPTION BAR', 'COCKTAIL', 'STUDY', and 'PRIVATE' areas. The plan also shows a large circular area at the bottom left, possibly a garden or a large hall. The drawing is a technical architectural sketch with lines, circles, and text labels.

[illegible]

#### 4. Sited Moss and the oriental void

This installation relates the Portico to the abstract concept of the oriental void in diverse manners. First, it borrows the Taoist *wu-wei* principle, or non-action principle, which advocates the preservation of the natural flow of all things.<sup>2</sup> *Sited Moss* doesn't aggressively intrude on the space by forcefully cutting or damaging it but simply emphasizes its ongoing decay by carefully introducing moss and sound. By doing so, the Portico grows from a space ignored by its users, who turned their backs to look out, to a space where users come to look in and be carried away by the scene before them. Indeed, the ruinous sight and the variety of sounds prompt the user's recollection of familiar places he once saw or visited, while his imagination transforms the site into an illusionary or visionary place which he then overlaps with the current space. In this manner, the user's consciousness is awakened to the site and vibrates in unison with the rhythm of the place; the user reaches the plenitude.

This interiorization process undertaken by the user subsequently generates the background for the Portico to undertake the interiorization process in its turn. Indeed, the Portico, which is part of UCL users' collective memory, gradually accumulates their individual memories and visions to eventually form its own spatial memory. The Portico is therefore metamorphosed into a spatio-temporal gate that acts as 'a nodal point made of the virtual and of the becoming',<sup>3</sup> where multiple times and spaces succeed one another in the fluid continuum of the oriental void.

The Portico's architectural space echoes, then, a note written by the UCL administration on the Portico's virtual space: 'Understanding the past, challenging the present, shaping the future.'<sup>4</sup> In consequence, the Portico becomes graspable in its wholeness only by combining its sensorial experience with a mental interpretation by the user's mind.

#### 5. Conclusion

*Sited Moss* illustrates the Taoist interiorization process of the oriental void by focusing on the user's perception, imagination and reaction to the site. Familiar sounds and moss patterns on the floor trigger the user's mind and initiate his sensorial immersion into the Portico's space. Indeed, this installation can be intuitively grasped and freely interpreted by the user in the manner of late picturesque gardens. This generates endless fluctuating space-time frames following the user's horismos of the place. The Portico is thus thrown into a wider historical, social and cultural context depending on the user's hermeneutical approach: it

becomes a Heideggerian space made of an infinity of places. In this respect, *Sited Moss* prompts the user's awakening to the Portico and to his manner of being in the Portico, perceptible through his movement and behaviour in the present moment. As a result, this installation can be perceived as a hyphen between the oriental and occidental awakening process of the void.

Taoist key principles of reversibility/reciprocity, interiorization and mutation succeed one another in the continuous flow of the oriental void. Those are all combined into the last project which incorporates ideas and representational methods drawn from previous works. In this case, hyphens such as moss, ruin or garden are considered not only as indicative or emblematic architectural devices but foremost as active and constructive components of the project.







## 3 Ruining a Ruin

The two previous projects were located in nineteenth-century buildings characterized by classical architectural features and a lifespan extending over two hundred years. Neglected in the city's urban fabric and/or protected as an architectural heritage, the Tivoli Corner and the Portico seemed estranged from the ongoing development of our contemporary society. In this context, the previous projects embodied the oriental void's key principles by highlighting the interactive exchanges happening between the site and the current environmental or economic contextual backgrounds. As a result, those spaces were revealed to the eye of their users and reintegrated into urban daily life.

*Ruining a Ruin* intends to change those earlier conditions by choosing a site that is actively involved in European socio-politic and economic situations. Located at the heart of the European Quarter in Brussels, the project is nested within the empty corner of the Committee of the Regions' building (CoR). It proposes to design a garden monoblock whose slow disintegration into ruin acts as a silent, continuous manifestation on the subject of climate change. It contrasts thereby with loud, aggressive and intermittent demonstrations that usually take place in front of the CoR building. Additionally, the project means to convey through its design, design process and mode of representation the oriental void's key principles of reciprocity, interiorization and, above all, mutation.

As a reminder, Taoism claims that there are multiple paths to reach the oriental void since it is a dynamic and fleeting continuum that cannot be grasped at once. In this respect, the oriental void embodies the concept of impermanence or transience where all things are in the process of becoming. It therefore grants more value to the act of transition or mutation than to the final state. This idea is best illustrated by the oriental architectural precept of passage which advocates 'slow, progressive, additive, sequential experiences initiated from the part to the elusive whole'.<sup>1</sup> Since *Ruining a Ruin* ultimately deals with architectural spaces in the form of a ruin, the project intends to incorporate as design incentives the remaining Taoist architectural precepts that can be briefly summarized as follows:

- The Taoist's aspiration to live in symbiosis with nature is expressed in architecture by the permeability of its construction and respect for the surrounding environment.
- The architectural impermanence transforms space into a passive receptacle which collects fluctuating temporalities.

- The bipolarity of the Yin and Yang relates the spatial complementarity and flexibility necessary for a balanced architecture.
- The architectural incompleteness enables the user to physically and mentally own the space.

Furthermore, since this project's principle strongly relies on time – the ruining time – I decide to incorporate time in the working method as well, like the Yuan landscape artist Huang Gongwang (14th century), who painted without hurry, relentlessly revising his composition again and again until the overall balance of his painting was right. Thus instead of spending short amounts of time on miscellaneous projects, each partially reflecting the oriental void, I make *Ruining a Ruin* my last project which embodies the oriental void in its whole. Subsequently, the project is mostly developed by obsessively focusing on a single section that is re-worked slowly, layer by layer, day by day, over a long period of time. In this manner, the making of the section runs parallel to the theoretical research, thereby influenced by and influencing at once the entire thesis. The section transcends the whole thesis to ultimately epitomize the oriental void.

In this chapter the historical context of Brussels as a European Union capital is first explained before moving onto its European Quarter and the site. Then the project's principles are unveiled, followed by the detailed description of its design development and key components. The chapter then discusses the project's representation before concluding on its relation to the oriental void.

## 1. Brussels as headquarters of the European Union

The European Economic Community (EEC) was established in 1957 by Belgium, Luxembourg, France, the Netherlands, Germany and Italy, mainly to facilitate economic trade and the migration of citizens between member states.<sup>2</sup> At the time, Strasbourg, Luxembourg and Brussels argued over the accommodation of various institutions of the European Parliament. In 1958, Brussels was voted by EEC members to be the main headquarters for the EEC. Indeed, the city was not only centrally located among member states but also offered the neutral position of Belgium in the battle of European powers that involved its larger members such as France and Germany. Besides, Brussels had just improved its transport infrastructure to host the 1958 World Exhibition. Heated debate ensued over the decision and, in 1965, the European Parliament's services were divided and distributed among the three cities. By the 1970s–1980s,

this geographic spreading was affecting the work efficiency of European employees owing to the time spent on commuting between cities. In consequence, those organizations were progressively recentralized back to Brussels. Today, Luxembourg has the Secretariat of the European Parliament, the European Court of Justice and the European Bank of Investment. Strasbourg has the European Parliament which, however, only holds twelve plenary sessions a year, the rest being held in Brussels. Brussels gets the European Commission, the Council of the European Union,<sup>3</sup> the European Council, the European Parliament and the Committee of the Regions.

Initially, the Belgian government was not too keen and diligent in providing space for EEC employees. This was mainly due to public opinion being hostile to an influx of foreign bureaucrats to Brussels. However, the Belgian economy could benefit highly from this: burgeoning satellite services, a boom in real estate, increased consumption and revenues, etc. Hence the government quietly let the private sector handle the situation and develop initiatives to accommodate those institutions. This was best illustrated by the building of the European Parliament in Brussels. In the 1970s, five building contractors bought the site of an old brewery in the Leopold quarter. They intended to build the International Conference Centre (Centre International de Conférences – CIC) and rent it to nearby European organizations. At the same time, these European organizations required more space for their growing number of employees in Brussels. They saw the CIC as a solution to their desired expansion. The project could still be modified according to their criteria and extended with several other buildings accommodating adjunct services such as libraries, offices and parking. However, France had already begun the construction of the European Parliament in Strasbourg. As a result, the Belgian contractors and the European institutions of Brussels, tacitly supported by the Belgian government, discreetly agreed on building a 'temporary' European Parliament that would host the daily informal activities of its employees. In that way, the Parliament in Brussels would not interfere with the one in Strasbourg where the official meetings would be held. In 1981, the flexibility of the temporary Parliament and its direct connectivity to other major European institutions established Brussels as the definite headquarter for the European Parliament.





## 2. Committee of the Regions in the European Quarter

The European Quarter is located along the two main one-way, east–west arteries giving access to or exit from the old city centre of Brussels. Rue de la Loi and Rue Belliard have up to five lanes each that are frequently congested. These arteries form the ideal place to block traffic and are therefore repeatedly and strategically targeted by demonstrations against European regulations (fig P.3.1).

Nowadays, the siting of most of European institutions in Brussels generates heavy consequences for the local neighbourhood. Along with an increase in road traffic, the proliferation of new office buildings provokes an exodus of local residents to the more affordable outskirts of the city. Those inhabitants are replaced by a population working directly or indirectly for the European Union.<sup>4</sup> Besides, the architectural, urban and environmental qualities of the European Quarter constantly deteriorate owing to the ever-growing demand for new offices that needs to be quickly satisfied. This generates a dismantled urban grid, with small private houses replaced by large corporate buildings, the disappearance of green areas and the rising pollution level (figs P.3.2–4). Roads become wider and appear as physical barriers difficult to cross. By contrast, pavements for pedestrian usage are sized down, exposing users to the noise, pollution and danger of heavy traffic. Macadam roads and concrete pavements raise another issue regarding water evacuation on rainy days. Their low level of permeability keeps the rain from quickly being absorbed into the ground, and instead it forms pools of water that jam the main arteries in and out of the city centre (fig P.3.5).

It is in this bleak context that my site is located, at the corner made by the exit-artery Rue Belliard and the Rue de la Remorque, a semi-private street ending at the European Parliament. A western void in the north-west corner of the building of the European Committee of the Regions (CoR) constitutes the site (fig P.3.6). The latter was originally built in the 1980s on a square plan presenting a private courtyard in its centre. In 2004, a renovation made by Art & Build modified and extended the existing building according to the evolving needs of the CoR.

The CoR is a political assembly introduced in 1994 to counter discontentment arising from the public which perceived the European Union as an abstract, omnipotent entity lacking a democratic approach and detached from its citizens' concerns. Indeed, complex interactions between the Council of the European Union (or the Council), the Parliament, the Commission and the European Council generate

European laws that need to be univocally respected by the public.

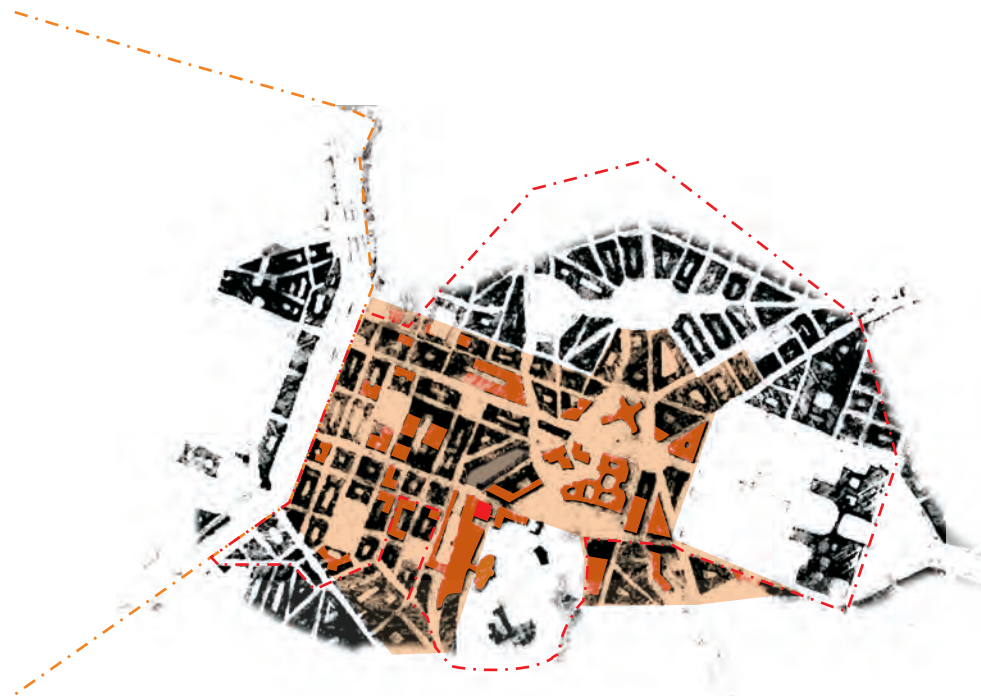
Conversely, the execution of those laws is regulated in practice by local and regional authorities who deal directly with the public. The CoR reconciles, then, the public with the European Union by allowing regional representatives to contribute in the development of European laws. They meet five times a year and their views on matters concerning local and regional interests are discussed by the Commission, which then transmits their recommendations to the Council and the Parliament. In consequence, the site reveals itself to be not only a physical but also a conceptual hyphen in the political context of the European Union.



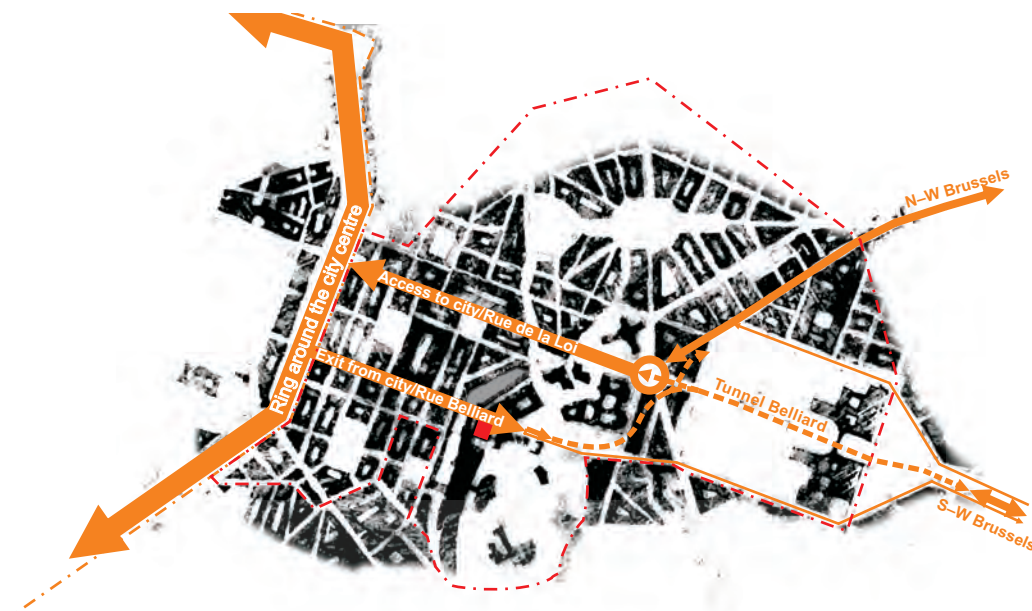
P.3.1



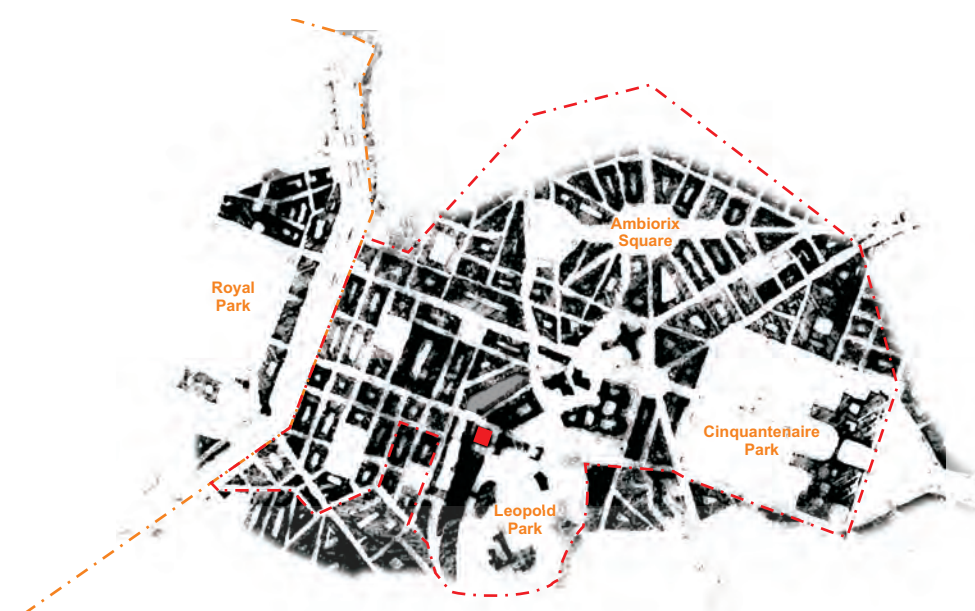
**P.3.1** Map showing the site in relation to Brussels' city centre and the European Quarter. The upper picture shows the east corner of the Committee of the Regions in a view from Rue Belliard looking towards Brussels' city centre. The lower right picture shows a view from Rue Belliard, looking west towards the Belliard Tunnel.



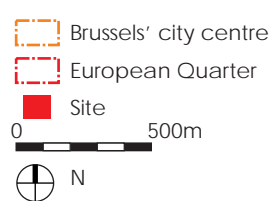
P.3.2



P.3.3



P.3.4



- P.3.2 Urban grain dismantled by large EU corporate buildings.
- P.3.3 East-West access/exit arteries to/from Brussels' city centre.
- P.3.4 Main parks around the site.



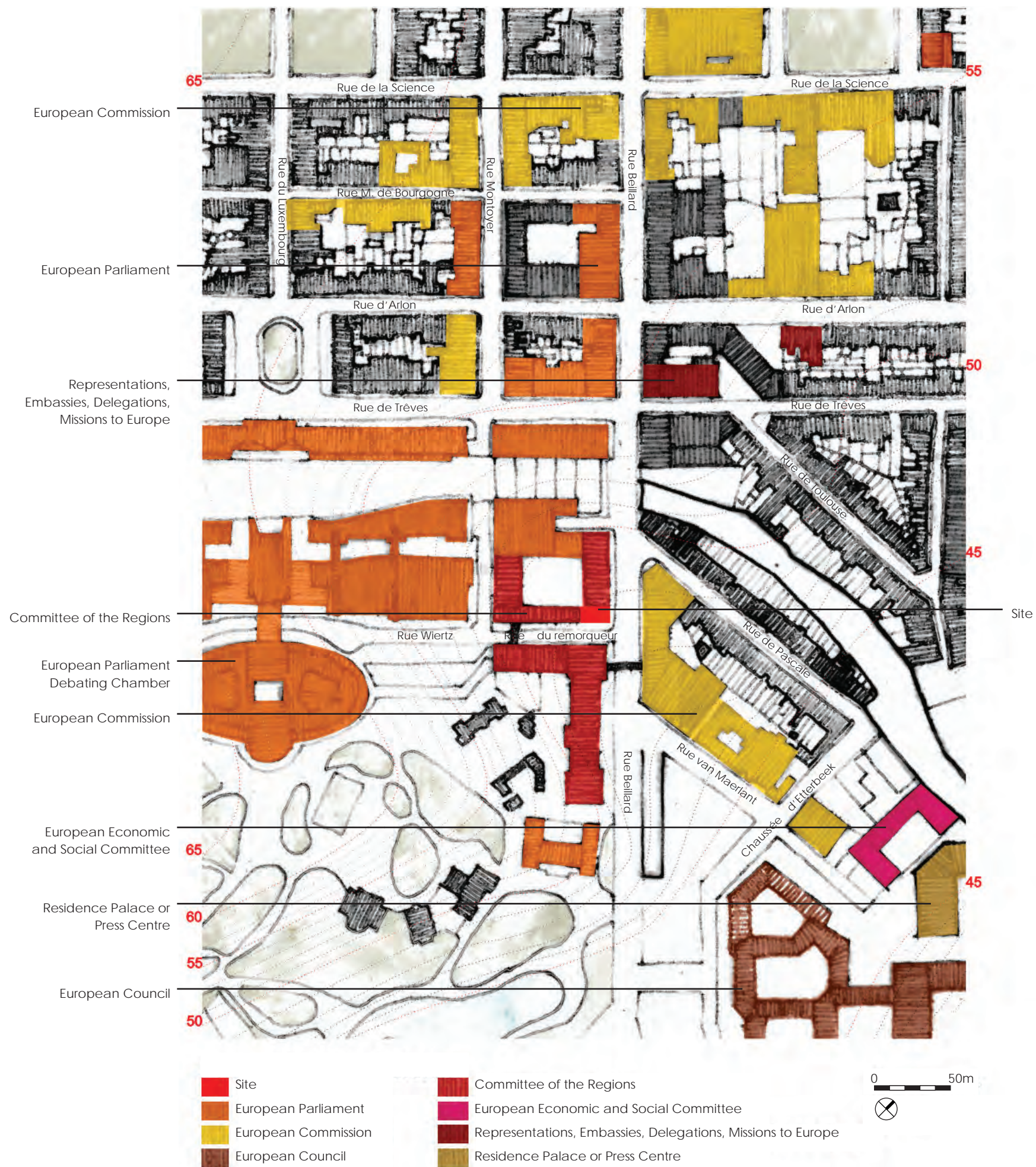
P.3.5



P.3.5 Plan of Brussels' ground permeability in 2006.



P.3.6



P.3.6 Site plan with various EU institutions in the European Quarter.



### 3. Principles of Ruining a Ruin

The grotto as a hyphen between the oriental and occidental voids constitutes the groundwork for this project. Earlier in the thesis, the grotto was compared to Chinese *Taihu* rocks by playing on scale and their fractal quality.<sup>5</sup> In this way, holes of a *Taihu* rock could be converted into grottoes while the *Taihu* rock became a fragment of the grotto. This interpretation was inspired by a painting exhibited at the Victoria and Albert museum back in 2004. During the exhibition *Encounters: The Meeting of Asia and Europe 1500–1800, A capriccio of Chinese landscape* (1744–48) painted by Antonio Joly (fig P.3.7) described the vision of *Taihu* rocks through the eyes of an occidental. Scattered in the landscape, these rocks were staged as pavilions where their holes and morphology provided a whimsical promenade for strollers. With these reflections in mind, would it then be possible to conceive an open-air, light grotto, buried in the air in order to link the negative space of the occidental void to the space-time continuum of the oriental void? An occidental void sliding to the realm of the oriental void.

*Ruining a Ruin* starts as a spongy garden monoblock which is progressively lithified into a ruin through its continuous exchange with the existing CoR building, climate and users. This biophysical metamorphosis relies on moss's interaction with calcareous water to form a limestone called travertine under a given environmental context. In this respect, the project needs to be regularly tended by a designated group of building-growers. The ensuing garden-ruin, or garden monolith, presents a speleological morphology which is constantly remodelled by weather-controlled devices that accelerate the overall decaying process. In consequence, the garden monolith records the climate's variations through its shape and decaying topographic surface.

#### 3.1 Garden monoblock

The monoblock is composed from a synthesis of soil blocks combined with sphagnum moss sheets, peat pots and felt, filled with expanded foam pellets, compressed sponge and floral foam. Some of these materials are pre-soaked in a solution rich in calcium carbonate ( $\text{CaCO}_3$ ) to initiate the lithification process. Seeds and seedlings of bio-indicator plants are also sown and transplanted in those material components before being compiled into the monoblock. They germinate at different speeds following the water irrigation within the project. Within a few months, the monoblock gets slowly covered with patches of moss, grass and

higher plants which then attract insects or birds, progressively turning the monoblock into a sort of vertical garden: the garden monoblock.

In parallel, the garden monoblock is subject to endless material and structural modifications. Natural erosion, due to wind, water and plants, wears away light materials such as soil dust, moss fibres and dried floral foam. When saturated with water, the latter also sags and drags down the monoblock as it absorbs water up to forty times its dry weight. Alternatively, compressed sponge and pellets increase their volume up to ten times their original size when in contact with water. By doing so, they extend the garden monoblock into the CoR building by invading terraces, forcing existing doors and walls to expose the building's emergency staircase to the sky.<sup>6</sup> Users can also leave marks by actively interacting with the monoblock.

In order to emphasize the decaying process, air- and water-controlled devices are created: the weathering instruments. Oriental fan-inspired tools react to air mass movement, strength and direction; a wind turbine activates a water pump, bringing city water up to the top of the monoblock. Some artefacts collect rain in calabashes, while others act as a rain gauge which modifies the monoblock's silhouette through a system of pulley mechanisms. The idea is to make small changes in climate visible or palpable at a bigger scale, by reverberating them onto the monoblock's topography. As a result, the project records the climate change through the weathering of its materials.

Over a few years, the garden monoblock progressively loses its structural stability while an amorphous and wavering nucleus is gradually unveiled. This ruin-looking core results from the early stages of lithification by calcareous deposits and is therefore temporarily kept in place and shape by a series of ropes hooked directly onto adjacent buildings or poles located on their roofs. That method is borrowed from the technique practised in oriental gardens where ropes attached to a post are used to shape budding trees or to help ageing trees hold their shape during snowy winter (figs P.3.8–9). As a supplement, light materials are sporadically re-introduced to specific points in order to support the sagging core from beneath.

#### 3.2 Lithification into travertine

Frail and light, this budding ruin is not yet accessible to pedestrians who can only glimpse here and there parts of its spatial composition when passing by the project. It exploits the adjacent CoR building's excess

P.3.7

P.3.8

P.3.9

P.3.7 Antonio Joly, *A capriccio of Chinese landscape* (1744-48).  
P.3.8-9 *Yukitsuri* rope system assisting trees holding their shape during snowy winters in the *Kenrokuen* garden (17th century), Ishikawa.

energy in order to sustain its growth and survival amid the asphalt and concrete environment. Evaporation and waste heat from the CoR cooling towers are collected and sprinkled onto the project to maintain a minimum level of humidity during summer or a minimum level of temperature during winter. On the one hand, this supports the growing of moss, plants and travertine alike, while on the other hand, waste heat from the CoR building is cooled by the ruin before being released to the city. Moreover, the project also extends into the ground by means of a well connected to the city water supply, rich in calcareous deposits. Rain collected in the CoR building is then combined with the pumped city water to irrigate the ruin.

Initial calcareous coatings of spongy materials are dissolved by the rain's acidity which is defined by its carbon dioxide ( $\text{CO}_2$ ) content. They percolate and accumulate with the city water's sediments on moss and other alveolar materials that act as mats gripping the floating deposits. Then life thrives back; bacteria, mosses and plants grow on top of the calcareous layer, before being washed again by rain and city water then covered with calcareous deposits in turn.

This phenomenon corresponds to the natural sedimentation process of the travertine, a sedimentary stone formed when water saturated with calcium carbonate ( $\text{CaCO}_3$ ) liberates carbon dioxide owing to a sudden change in pressure or temperature. It then precipitates deposits of calcite or aragonite onto surrounding biotic material such as algae or moss (figs P.3.10–14).

Reciprocally, the stone provides the right ecosystem with tiny bacterial colonies for algae and moss to grow. New layers of biotic material grow on top of old encrusted ones, which are then lithified by the drifting deposits in their turn. When the water temperature rises or its flowing current is high, the sedimentation process accelerates as it enhances the carbon dioxide liberation in the air, generating thereby high-density stone. By contrast, ambient temperature or quiet flow forms the very porous meteogene travertine, commonly known as tufa. Thus unlike other rocks, travertine does not require high heat to melt minerals or high pressure to compact sediments and grows on calcicolous moss at a quick pace, rising up to 11 to 14 cm a year.<sup>7</sup> According to research undertaken by scientists from the University of Oslo led by Pr. Dag Kristian Dysthe, the travertine presents a fractal quality that can be observed in that its 'Pool/rim shapes [are] similar on all scales' (figs P.3.15–16) and has a geomorphology that depends on the river flowing speed: 'fast flow/large

currents: [generate] mounds with ripples' while 'slow flow: [generate] horizontal rims hold pools of water'<sup>8</sup> (figs P.3.16–17).

This rhythm of formation is reflected in the stone's stratified layers. In the context of this project, those layers enable the reading of the ruin's geochronology but also of its environmental conditions. On the one hand, EU employees' abuse of the HVAC system prompts a rise in waste heat released by the CoR cooling towers. This heat is ultimately transmitted to the project's hydrology which then accelerates the sedimentation process of the limestone. The ensuing large bands of travertine metaphorically build the ruinous future awaiting the CoR building's environment. Over a period of two centuries, the wavering garden monoblock could be fossilized in an ironic manner into the original, raw material of what currently clads the halls of most European buildings. On the other hand, those layers of travertine reveal the course of time: dust, ranging from air pollutant particles to human hair and skin flakes, from insects to pollens, is entrapped within the calcareous blanket as witness of its era. In this perspective, the project can also be used as a register of the quality of past climate and living conditions.

As the vertical garden slowly hardens, previously inaccessible indoor spaces open up while semi-closed grottoes appear where there were once outdoor areas. The latter partially fill with water during periods of heavy rain and become accessible to the public when dry. Those speleothem formations as well as the spatial redistribution are monitored to tune the ruin's evolution according to its users' safety and to its connections to the existing CoR building. Furthermore, the previous weathering instruments do not only erode the ruin but also indirectly participate in its shaping by manipulating water's fluctuation, quantity and quality within the ruin. By doing so, water alters the location and the sedimentation time of the travertine which in turn rearranges the flow patterns within the ruin. This mutual inducement creates a continuous organic modulation of the landscape's architecture.

Finally, the garden monoblock's degradation happens in parallel with the rising of the ruin following a slow alternating movement between moss and travertine. It is this dynamic biophysical mutation that defines the essence of *Ruining a Ruin*. This constant process of becoming transforms the project into a hyphen in-between the garden monoblock and the ruin: the garden monolith.

P.3.10



P.3.11



P.3.12

P.3.13



P.3.14

P.3.15

P.3.16

P.3.17

P.3.10–12 Moss and algae covered by calcareous film.

P.3.13–14 Small water fountain slowly being petrified into travertine.

P.3.15–16 Fractal quality of the travertine formation.

P.3.16–17 Travertine's geomorphology forming horizontal pool terraces or vertical mounds depending on the speed of the water flow.

### 3.3 Garden monolith and CoR

The project's architectural design relies on biotic interactions within the garden monolith as well as on its biophysical interactions with the surrounding environment. Each of its components has thus an active role in the garden monolith's continuous mutation. In this respect, *Ruining a Ruin* acts as a political metaphor for the CoR's endeavours to establish a bottom-up approach in the current legislative procedure in the European Union. This method takes into account public opinion in the legislative proposal or execution by the European Commission. The method draws the European Union as an abstract entity closer to its citizens to become a more viable solution in the long term.

Furthermore, the ruin records annual data regarding climate change and local environmental quality within the travertine's layers, density and shape. In this respect, the project can be enhanced to an urban-scale monitoring device, by spreading this type of garden monolith in different sites of Brussels. The ensuing report can then be presented to the ENVE Commission of the CoR, which deals with issues regarding environment, climate change and energy. It informs on the history of the CoR's energy consumption as well as on the long-term effect of the application of EU policies regarding climate change and energy management in Brussels. Following the reported results, the CoR brings back those issues on its environmental agenda and makes the necessary amendments to improve the sustainability of urban development in Brussels.

## 4. Components of Ruining a Ruin

### 4.1 Building-growers/users

*Ruining a Ruin* develops the idea of growing a building as a plant. Like a gardener who plants a seed, then actively participates in its growing into a tree by constant watering, pruning and shaping, a group of building-growers nurtures the dry ruin to turn it into a luxuriant ruin. Gardening tools are substituted by weathering instruments to cultivate the ruin's diverse topography. Pruning is replaced by tending moss, since the latter defines the travertine's growth, and plants, since their root accelerates or slows down the ruin's disintegration. Watering is amplified to an entire hydrologic network acting as an irrigation system that both affects and is affected by the ruin's growth. Harvesting fruits is swapped with collecting leaves from bio-indicator plants and rock samples to monitor the ruin's health condition as well as the environmental contamination. Shaping is

changed into landscaping the ruin's overall morphology and connecting it to surrounding buildings.

In this respect, building-growers consist of environmental geologists and scientists, landscape architects, architects and gardeners who all work closely together assisted by dedicated volunteers chosen from among EU employees. Environmental geologists monitor the lithification process and the hydrologic distribution in the project, while environmental scientists monitor the air and water quality of the surrounding environment by analysing samples of rocks or bio-indicator vegetations planted by gardeners. The latter participate in the project by tending plants and adjusting the monoblock's irrigation through water-controlled devices. Landscape architects and architects supervise the appearance and disappearance of spaces within the ruin and revise its connections to adjacent buildings following the ruin's evolution.

The garden monolith is open to regular passers-by as well as EU employees. At street level, the rough and uneven surface of the garden monolith spills out onto the sidewalk and can serve as a seating area. The public can also occupy the upper and lower levels of the monolith as an ordinary garden or as an observatory for the fauna and flora developing in the urban context of the European Quarter. For the CoR's employees, the garden monolith can be perceived as an added extension to the CoR outdoor courtyard and used as an in/outdoor corridor between the adjoining wings of the CoR's building. This connection is only possible at specific levels owing to the foraminate morphology of the garden monolith.

The garden monolith is inhabited differently everyday as it constantly evolves through time depending on the season and weather condition of the day. Indeed, rain turns moss slippery and fills some of the monolith's inner chambers with water while strong wind activates the weathering instruments that isolate or prevent some places of the garden being fully reached. In those circumstances, the garden monolith changes from a place to walk in and look from to a place to walk by and look at. As a corollary, users need to be vigilant as when outdoors in the countryside, alert to their surroundings and conscious of their behaviour since there are no particular balustrades to keep them away from danger. They are fully responsible for their actions and are usually advised or guided by the building-growers working on site.





## 4.2 Materials

### 4.2.1 Growing seeds experiment

Alternatives to conventional building materials are tested in order to create a garden monoblock that embodies the void in not only its spatial but also its material composition. Simultaneously, they also need to act as a soil substitute to grow moss, grass and plants. In this context, open-cell foam, compressed sponge, disposable peat pot, peat pellet, floral moss and compressed sphagnum brick are chosen for experimentation (figs P.3.18–19). Most of these materials present an alveolar structure that traps air, water or dust, which in turn modify the material's physical features through swelling, expanding or shrinking. Tests are made by growing seeds of basil in each substance accompanied with regular tap watering without the addition of nutrients. Once the speed of growth is defined, the frequency of watering is diminished to see what matter would best keep the plant alive. Then the sample is left to dry, to see any signs of shrinkage or traces of the sedimentation process (figs P.3.20–24).

The open-cell foam is chosen for its particularly light and flexible properties, thanks to its large structural pores. It absorbs water up to twenty times its dry weight and is recently found on the market in its biodegradable form. An open-cell foam sheet of 2 cm thickness is coupled with soil in this experiment. Seeds fall deep within the foam's pores yet grow easily in this combined medium. The sample dries at a moderate pace and compacts soil into a solid layer on the bottom the foam sheet (figs P.3.20, 25).

The compressed cellulose sponge is a biodegradable foam sponge, thermally compressed up to 1–3 mm thick in its dried state. This material is chosen for its irregular pores and its amplified physical reactions to water, as it absorbs up to ten times its own weight and swells up to five times its original thickness. Seeds don't sprout as they remain on the sponge's surface, unable to fall into its small pores. The sponge quickly dries by slightly shrinking in volume, ultimately turning stiff and rigid (figs P.3.21, 26).

A peat pellet is a disc of compressed peat mixed with nutrients often wrapped in a biodegradable mesh. Once watered, the pellet swells in a cylinder to up to seven times its original height. This material is chosen because it offers the advantage of replacing pot, soil and nutrients all at once. Basil seeds grow fast into healthy seedlings. The pellet slowly dries, becoming dusty and friable (figs P.3.22, 27).

Biodegradable floral foam presents a cellular structure similar to the one found in a flower stem. Thus, it quickly absorbs water by capillarity and retains water in its cells up to forty times its dry weight, while also minimizing water loss when saturated. This material is chosen because it is easily friable and breakable when dried or over-saturated. Lightly buried seeds slowly sprout into weak seedlings. After three weeks of watering, the floral foam's surface is covered with a thin layer of moss which turns brown as the sample slowly dries (figs P.3.23, 28).

The same experiment is applied on a moss sample of the compressed sphagnum brick. The latter is a light brick made of compressed dried sphagnum moss which expands up to twelve times its original size and absorbs water up to twenty times its dry weight. Basil seeds drop at various depths in the moss's multiple layers and sprout into seedlings at a slow pace. The sample dries slowly by returning to its original light fibrous state, shaped in the form of its container (figs P.3.24, 29).

A disposable peat pot is made from peat<sup>9</sup> compressed into small containers that need to be filled with a substrate in which to plant the seed. Once the seedling's roots pass through the pot, it is safely transplanted to the ground as the peat pot naturally disintegrates. The peat pot is chosen for its various scales, shapes and modules that can be modified and combined with other substrate. In this experiment, seeds are planted in a peat pot half filled with soil. They don't germinate, despite regular watering, while the pot's walls remain hard and dry (fig P.3.30).

Soil is also manipulated into cubic soil blocks where the seedling's weaving roots slowly take over the soil and solidify the block. It is usually composed of a blend of peat, compost, soil and sand that forms a good alternative to peat pellets as it also offers the plant both container and substrate (fig P.3.31).

All these materials can be moss-sprayed with a mixture of sugar, chopped moss, and buttermilk or beer in order to unify the visual disparity. This mixture needs to be kept continuously moist for a few weeks so that moss gets firmly anchored on the material's surface. Anna Garforth, an English artist-designer, collaborated with ecological artist Eleanor Stevens in the course of summer 2008 to create *Sporeborne*, a moss-graffiti-message, or 'mossenger', near Clissold Park in Stoke Newington, London.<sup>10</sup> To this end, she collected 'common moss growing well on brick then glued it to the wall using a mixture of natural (bio-active) yogurt and sugar'.<sup>11</sup> In the long run, moss is expected to naturally spread and cover the hosting wall (fig P.3.32).



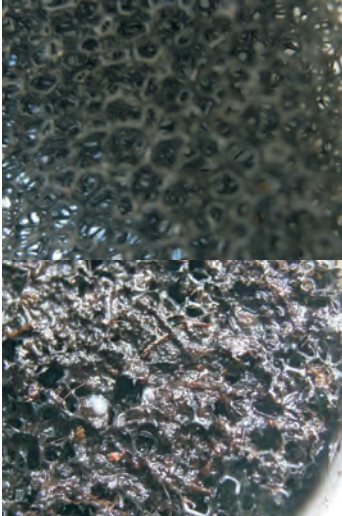
P.3.18



P.3.19



P.3.20



P.3.21



P.3.22



P.3.23



P.3.24

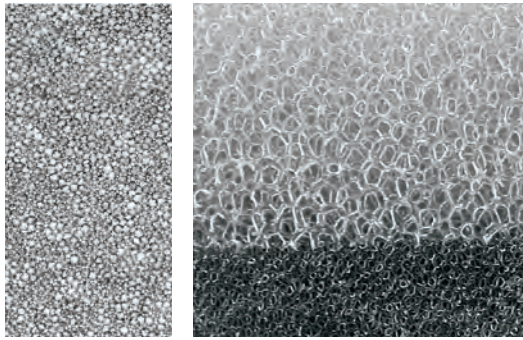


P.3.18 Experiment with growing basil seeds in six different alveolar materials.

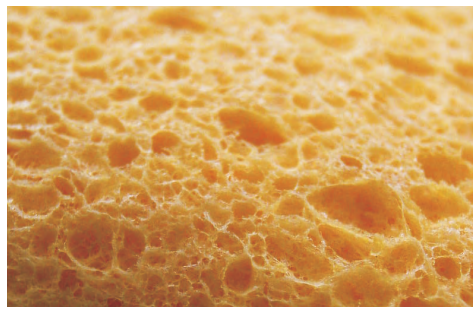
P.3.19 Three week-old basil sprouts.

P.3.20–24 Pictures taken at regular intervals over a period of six weeks, showing the samples' evolution up to their final desiccated state.





P.3.25

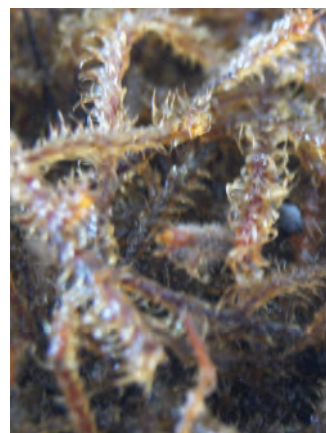


P.3.26



P.3.27

P.3.28



P.3.29

- P.3.25 Open-cell foam.
- P.3.26 Dried and wet compressed cellulose sponge.
- P.3.27 Dried and wet peat pellet.
- P.3.28 Floral foam.
- P.3.29 Sphagnum moss.



P.3.30



P.3.31

P.3.32

P.3.30 Peat pots pierced by young roots.

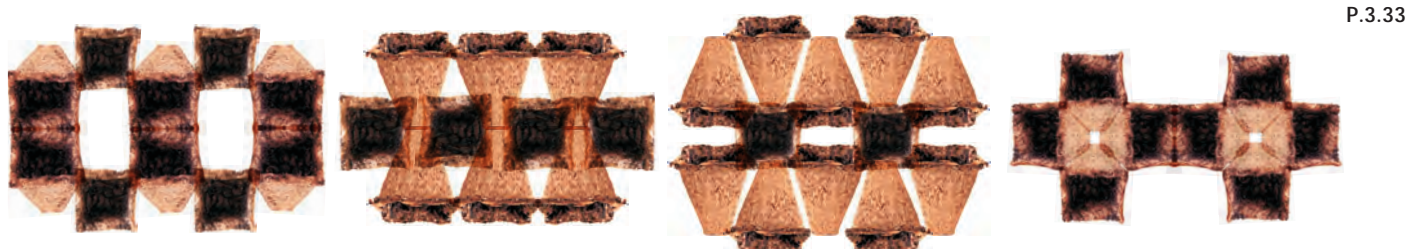
P.3.31 Compacted soil blocks kept in shape by a mesh of six week-old basil roots.

P.3.32 Anna Garforth and her messenger *Sporeborne* (2008).

Extending the first experiment, peat pots are modified and coupled with materials presenting a better water retention in order to create large structural modules to build the garden monoblock. The walls of a peat pot tray are cut and folded in different directions to obtain diverse open-closed configurations. The latter are then assembled into three-dimensional modules that are soaked in calcium carbonate solutions to harden them into a solid structure. Ensuing structural modules contain pockets and interstices that are then filled with other tested media (figs P.3.33–36). In the context of the project, those modules are developed at larger scale, to provide the initial garden monoblock a structural stability. An alternative to the peat pot tray is the moulded paper pulp egg tray. It offers great variety in shape and size that can be stacked and filled with other tested growing media. However, some might present a high level of acidity owing to their glue component, which makes growing superior plants difficult (fig P.3.37).

These experiments inform the garden monoblock's design since they highlight those materials' reaction to water and their desiccation process. In the context of the project, some materials weather away while others are continuously replaced by building-growers as time passes. Plants' roots grow thick to form a natural mesh that keeps the ruin from eroding in some places (fig P.3.38). In this manner, the ruin's irregular shape is gradually unveiled.





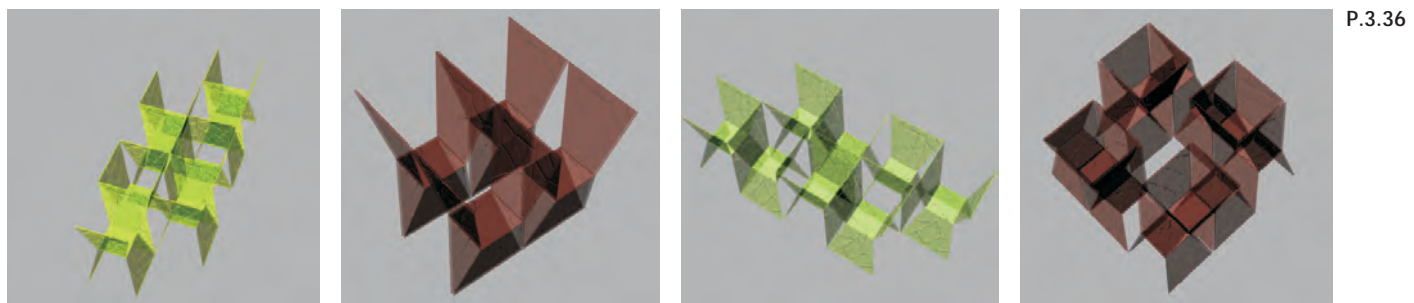
P.3.33



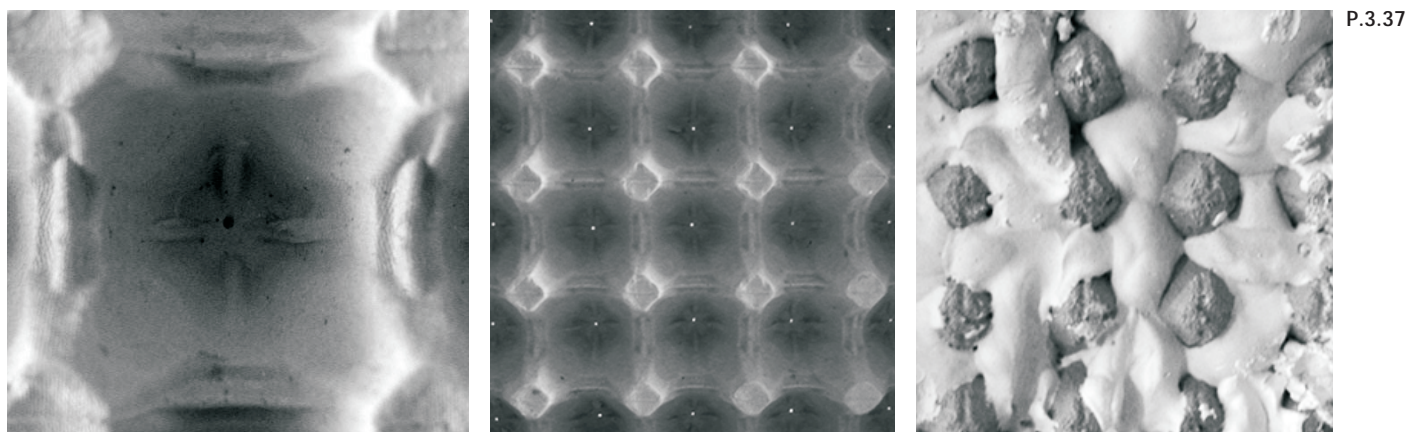
P.3.34



P.3.35



P.3.36



P.3.37



P.3.38

P.3.33–35 Variation on peat pot modules that could be filled with the other experimented materials.

P.3.36 Rhino computer models of a variety of peat pot modules.

P.3.37 Paper pulp egg tray rigidified with plaster to simulate its calcification.

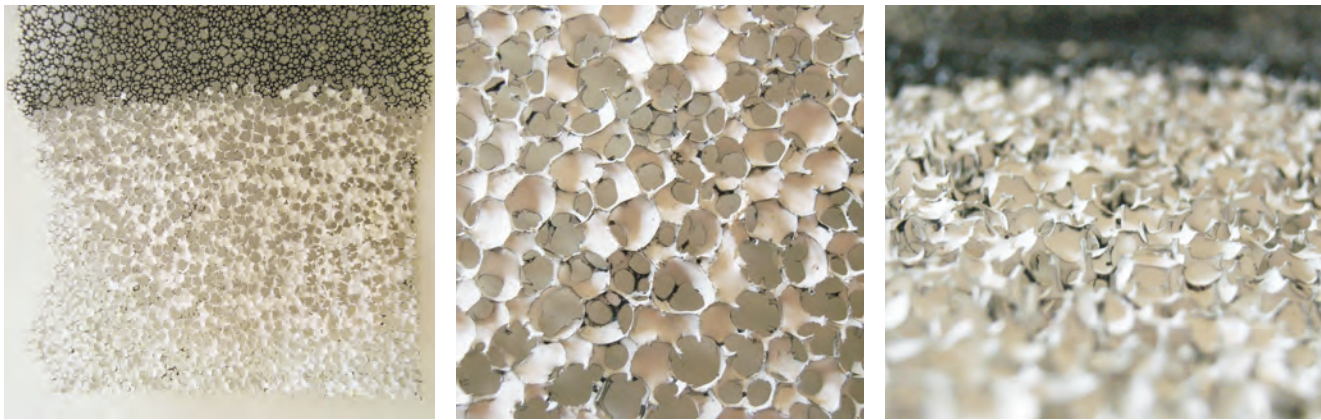
P.3.38 Roots growing into a tight mesh affecting in the long run the morphology of the place.

### 4.2.2 Lithification experiment

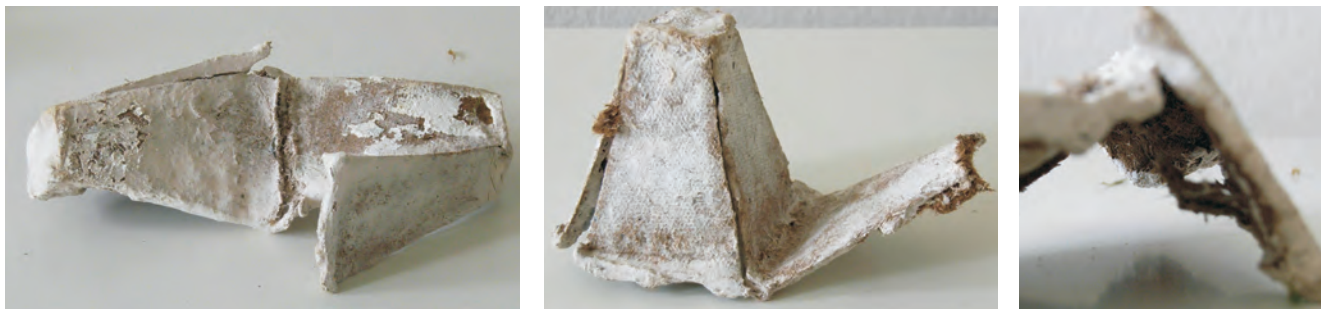
From the previous alveolar materials, the open-cell foam, peat pot, sponge and moss are brought into the lithification experiment to observe their physical reactions when covered by a calcareous layer. This experiment informs the ruin's design as it reveals the diverse types of solidification occurring in the garden monoblock. The test is carried out by dipping them in or covering them with a liquid plaster mimicking the calcareous layer, bearing in mind that plaster shrinks slightly as it cures and that its acidic pH might have some biological impact.

As the open-cell foam is dipped in the liquid plaster, it bows and buckles under the plaster's weight but still offers a light suppleness as plaster fills the foam's cells rather than covering the cells' walls (fig P.3.39). The peat pot absorbs water from the liquid plaster, leaving on its walls uneven dried plaster flakes that slowly peel off as they dry. It becomes thereby brittle and easily breakable (fig P.3.40). The sponge swells by absorbing water from the liquid plaster but this swelling is restrained by the plaster's solidification process. In fact, the plaster doesn't reach the sponge lower layers, whereas a crust appears on the sponge's surface, emphasizing its porous texture. Expanded only on its top, the sponge lightly curls as a whole (fig P.3.41). As expected, the sphagnum moss firmly grips the plaster flakes on its fibrous leaves and stems. The moss's loose branches are solidified into a single solid mass (fig P.3.42).





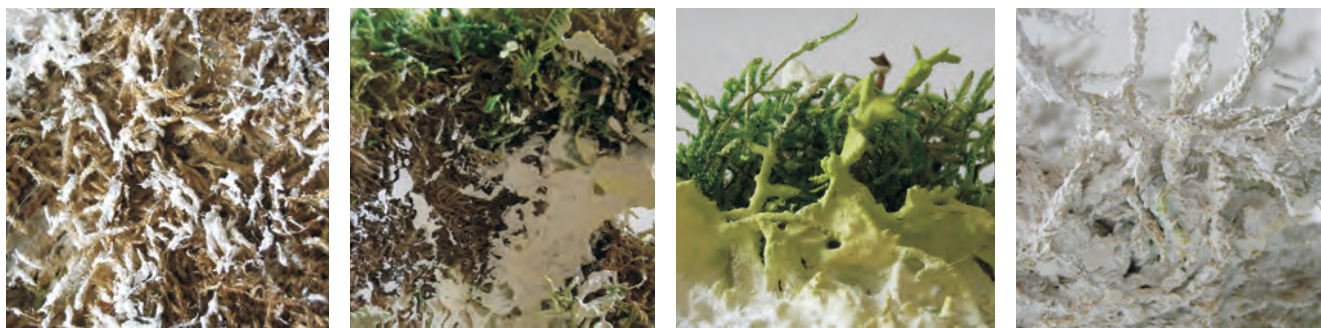
P.3.39



P.3.40



P.3.41



P.3.42

P.3.39      Lithification experiment with liquid plaster and open-cell foam.

P.3.40      Lithification experiment with peat pot.

P.3.41      Lithification of compressed cellulose sponge.

P.3.42      Lithification of sphagnum moss.

### 4.2.3 Living walls

In order to complete the garden monoblock's structural stability, the thesis briefly browses through the existing living walls. The latter often consist in a cladding system covering a building's wall with living plants and moss. Two types of mechanism can be distinguished: the fabric-based living walls and modular panel-based living walls.

Patrick Blanc and his team developed a fabric living wall system consisting of a metal frame covered by a sheet of PVC 1 cm thick on which is stapled one layer of polyamide felt (3 mm thick). Cuts are made in this thick blanket where seeds or seedlings are planted. A closed irrigation system rich in nutrients is provided for plants to grow: felts are kept moist and any water excess is collected on the bottom then re-injected in the watering system at the top.<sup>12</sup> This vertical garden creates a microclimate helping to regulate the urban context (fig P.3.43). Other fabric living walls use similar systems of geotextiles such as horticultural felt or rockwool combined with PVC sheets for waterproofing the structure side and a galvanized metal mesh to give it some rigidity. These fabrics act as mosses for superior plants to develop, as would happen in nature. A closed irrigation system can double as a structural frame, its microvalves pulverizing nutrient-saturated water for plants to grow.

Other living wall systems consist in modular panels clipped onto a structural frame, coupled with a closed irrigation system. This type of living wall offers great flexibility in composition, rapidity in its installation and easy maintenance with modules which can be individually replaced. This category can be subdivided into three types.

The first type is made from polypropylene plastic containers filled with a growing medium. Appropriate plants satisfying criteria regarding climate, environmental or technical roles and aesthetics are then grown in those containers. The London Westfield Shopping Centre's southern terrace wall designed by EDAW architects in 2008 used Easy Green pregrown modular panels developed by Elevated Landscape Technologies. Each panel of 50×50×8 cm weighs up to 60 to 70 kg/m<sup>2</sup> (wet) and accommodates up to 25 plants. This living wall requires three litres per square metre of water for irrigation (fig P.3.44).

The second type of living wall is made from rigid, inert and biodegradable panels of aminoplast resin foam wrapped in a horticultural felt. The foam acts as soil or nutrient substrate where vegetations can be directly planted. These panels require few replacements during the living wall's lifespan as

the foam doesn't putrefy in contact with water and fertilizers. Its alveolar texture retains water easily but also lets enough air circulate around the plants' roots to protect them from decay. Hence, roots grow healthily by drawing the right amount of nutrients and water from the wall (fig P.3.45).

The last type is made from a galvanized metal or polypropylene plastic mesh box filled with a fibrous and light growing medium, such as sphagnum moss. Depending on the mesh aperture size, seedlings can be pre-planted in nurseries or directly planted in the substrate. The advantage lies in the walls' light weight and quick installation as each cage can be directly bolted into the existing wall, leaving a gap between the walls for ventilation (fig P.3.46).

In this context, the garden monolith takes inspiration from the hardfoam panels in accordance with the project's spongy materials and intentions in relation to the void.

P.3.43



P.3.44



P.3.45

P.3.46

- P.3.43 Patrick Blanc, living wall of *BHV Homme* (2007), Paris.
- P.3.44 EDAW architects, the *London Westfield Shopping Centre's* southern terrace wall (2008), using pregrown modular panels Easy Green System developed by Elevated Landscape Technologies (ELT). Installation diagram for living walls made of modular panels.
- P.3.45 Vertical Green Company, Fytowall, biodegradable panels.
- P.3.46 Galvanized metal mesh box filled with sphagnum moss and polypropylene plastic mesh box filled with soil substrate.



## 4.3 Bio-indicators

### 4.3.1 Flora

Diverse plants are introduced by building-growers as bio-indicators of the environmental air quality or as components slowing down the ruin's decaying process. They are also chosen for their ability to grow in the karstic environment created by the ruin. These bio-indicators are analysed in laboratories for accurate results, but most of them present visual variations that can be easily grasped by non-scientists. Those changes being accelerated by the greenhouse effect, the EU measures the efficiency of their environmental policy whereas the public awakens to the palpable impact of an invisible pollution and modifies its behaviour in regard to the climate change issue.

The *Medicago sativa*, or alfalfa, is sensitive to air pollution by high levels of SO<sub>2</sub> and NO<sub>2</sub>, mostly emitted by car exhaust. This can be observed in the thinning of its biomass, the height of the adult plant, the leaves' various discolorations, called chlorosis, and the sulphur content analysed in the laboratory (fig P.3.47).

The *Trifolium subterraneum*, or sub-clover, is a plant native to Belgium that is self-fertilizing, developing its seeds underground, and thrives in poor-quality soil where other clovers cannot survive. It is recognized by the European organization UNECE<sup>13</sup> as a significant bio-indicator of phytotoxic ozone as its leaves are subject to chlorosis, before becoming lacerated, depending on the level of exposure (fig P.3.48).

The *Taraxacum officinale web*, or dandelion, and the *Cichorium intybus* L., or Chicory, are also native to Belgium. They resist various climates and thrive in any type of environment, making them good bio-monitors for heavy metal pollutants like lead (Pb), cadmium (Cd), copper (Cu) and zinc (Zn), which they accumulate in shoots, roots and rhizomes (fig P.3.49).

The *Ipomoea violacea*, or heavenly blue morning glory, is a climbing plant whose flowers can be used as a bio-indicator, monitoring the surrounding air quality. Its colour turns from iridescent blue to violet-pink when exposed to a high level of CO<sub>2</sub>, indicating thereby the presence of an acid environment (pH<7). They get their nutrients from the morning dew and spread rapidly in a temperate climate (fig P.3.50).

The *Nicotiana tabacum*, or tobacco, is regularly used in Europe as a bio-indicator, monitoring the surrounding air quality. When exposed to high levels of phytotoxic ozone (O<sub>3</sub>), tobacco leaves show various brownish

stains. The number of stains on a leaf as well as their diameter and colour define the degree of air pollution. The plant grows relatively easily in temperate climates, provided it receives regular watering (fig P.3.51).

The *Phalaris arundinacea*, or reed canary grass, is a competitive perennial graminoid that grows in dry or poorly drained grounds by spreading its rhizomes in a thick net. This formation protects lean friable soil from erosion but the grass is also used to filter polluted water. Its seeds provide nutriments for birds (fig P.3.52).



P.3.47

P.3.50

P.3.48

P.3.51

P.3.49

P.3.52

- P.3.47    Medicago Sativa at various stages of growth.
- P.3.48    Trifolium Subterraneum and the various degrees of its leave's chlorosis and laceration.
- P.3.49    Taraxacum Officinale web and Cichorium Intybus L.

- P.3.50    Ipomoea Violacea and the colour variation of its flower at six hours interval.
- P.3.51    Nicotiana Tabacum and its leaf's necroses, intact and attacked stomata under microscope.
- P.3.52    Phalaris Arundinacea.

### 4.3.2 Moss

As for mosses, most species are bio-indicators of air quality as they collect metal pollutants on their leaves. Some species also form a negative bio-indicator of soil quality through the thinning and disappearance of their biomass when the site's initial conditions are modified.

Sphagnum moss thrives well in an acid environment and its propagation in an area indicates an augmentation in its water acidity. Capsules of dried sphagnum moss can be plunged in the project's water stream to monitor its quality. It also accumulates metal pollutants such as zinc (Zn), cadmium (Cd) and lead (Pb) on the leaves (fig P.3.53).

The *Aulacomnium androgynum* and *Grimmia pulvinata* are commonly known as pin-cushion or bun moss and are found thriving on concrete walls of our cities. They are good bio-indicators, detecting the level of SO<sub>2</sub> and NO<sub>2</sub> contamination in the air with the thinning of their biomass. *Grimmia pulvinata* develops well in a calcareous environment (pH>7) (fig P.3.54).

The *Hypnum cupressiform* and *Pleurozium schreberi* are feather-like mosses that form a continuous carpet of moss. They can be used as bio-indicators for air and water quality as they accumulate mercury (Hg), silver (Ag) and beryllium (Be) metal particles on their leaves (fig P.3.55).

The *Cratoneuron commutatum* (fig P.3.56) and the *Bryum pseudotriquetrum* (fig P.3.57) are calcicolous mosses commonly found around sources of travertine. Indeed, their leaves get slowly encrusted with drifting deposits of calcite, building layer after layer of travertine.

P.3.53

P.3.54

P.3.55

P.3.56



P.3.57

- P.3.53 Sphagnum moss.
- P.3.54 Aulacomnium Androgynum and Grimmia Pulvinata.
- P.3.55 Hypnum Cupressiforme and Pleurozium Schreberi.
- P.3.56 Cratoneuron Commutatum.
- P.3.57 Bryum Pseudotriquetrum.

### 4.3.3 Fauna

*Aeshna grandis* or brown hawker dragonfly, *Euphydryas aurinia* or marsh fritillary, *Inachis io* or peacock butterfly, *Lasioglossum malachurum* or Eurasian sweat bee and *Meta menardi* or European cave spider can be found in karst environments and therefore are often associated with the flora presented above (figs P.3.58–63). They help pollinate or propagate flora burgeoning in the project and constitute nutriments for local fauna consisting of, among others, birds, mice and bats. Their presence or absence can also relate to the habitat's health condition. In this manner, they actively participate in the ecosystem created by the project.

Furthermore, common indigenous birds found in Brussels city centre are the *Passer domesticus* or house sparrow, the *Pica pica* or European magpie and the *Turdus merula* or blackbird, among many others (figs P.3.64–66). The project provides them with daily victuals as well as a place for their nests which can be settled in hollows, grottoes and other accidents on the ruin's surface or dug into the soft parts of the garden monoblock. They participate thereby in the overall ruining process of the project.

Other species of insects, birds or even rodents undoubtedly inhabit the project but those presented in this context have different lifespan and reproduction periods that help the viewer imagine the life cycle within the garden monoblock and ruin, thereby bringing the project to life. In the long run, other flora and fauna invest the project either naturally or through building-growers, so that the ruin contributes to the development of the urban landscape's biodiversity.

P.3.58

P.3.59

P.3.60

P.3.61-62

P.3.63

P.3.64

P.3.65

P.3.66

- P.3.58     Aeshna Grandis.
- P.3.59     Meta Menardi.
- P.3.60     Inachis Io.
- P.3.61-62   Euphydryas Aurinia.
- P.3.63     Lasioglossum Malachurum,

- P.3.64     Passer Domesticus.
- P.3.65     Pica Pica.
- P.3.66     Turdus Merula.



## 4.4 Weathering instruments

Weathering instruments are created to emphasize or accelerate the monolith garden and ruin's deterioration while also making the subtle climatic movement more evident to the user's eyes. They are taken care of by the building-grower who, by replacing or shifting them around the monolith/ruin, actually participates in the shaping of that monolith/ruin, just like a gardener would when tending a plant.

The giant kites are inspired by the giant Japanese kites flown on special occasions: bamboo bones stretch a 10 m<sup>2</sup> fabric made of sphagnum moss woven together with a horticultural fleece. Anchored to the adjacent EU buildings, they take off when the wind speed grows up to 5~6 m/s, which corresponds to an average wind speed at 60 m above ground level. This wind 'tunnel' effect is emphasized in this particular site because of the tall EU buildings and the large artery of the Rue Belliard (fig P.3.67).

The water condensers present a hard willow or bamboo frame on which is spread a flexible membrane, made from moss and galvanized wire woven together. Humidity found in the ruin condenses on the moss membrane according to the air temperature and the level of relative humidity. Resulting dew and other rain droplets are then collected in the membrane, which slowly expands like a pocket (fig P.3.68).

The flying bridge is a reference to the *Yuan Yeh* garden manual which advocates the use of a 'flying bridge' to reach the rock in the middle of a pond in a Chinese traditional garden. In this context, the bridge connects the existing EU buildings to the ruin according to the day's atmospheric conditions. It is suspended from the giant kites by means of moss ropes and is mostly made out of an articulated galvanized metal and bamboo structure. Its accessibility depends vertically on the position and altitude of the giant kites and horizontally on the water condensers' weight (they hang on specific modulation points of the bridge). It can also be directly adjusted by the building-grower (fig P.3.69).

The tending fans are inspired by oriental fans. They consist of a bamboo pole topped with a bamboo frame on which is stretched a sphagnum moss sheet. Diverse gardening tools can be attached to the other end of the pole. Fans are then strung together on a galvanized rod to freely move or rotate, following the wind pattern. They progressively erode the ruin or nurse the plants growing on the ruin. The building-grower needs to choose the gardening tools and replace them with new ones when worn out, and mend the fabric when broken (fig P.3.70).

The articulated arms present a galvanized metal structure and work through a system of pulleys and counter-weights formed by a sponge ball wrapped in a moss basket. They act in two manners: either as a damaging, scraping tool, or as a supporting tool that prevents parts of the ruin from collapsing and maintains them in shape until they solidify. At the beginning, they are mainly positioned by the building-grower on the neighbouring EU buildings as the monolith is still too frail to support their weight. But as the monolith slowly hardens into a ruin, they are gradually transferred directly onto the ruin. Most of the time, the counter-weights are locked in place by the building-grower. However, they can be left loose during heavy rain periods, so that the sponge ball acts as a rain gauge by soaking up water. In that case, the amount of rain is made visually graspable by modifications brought to the shaping of the ruin (fig P.3.71).

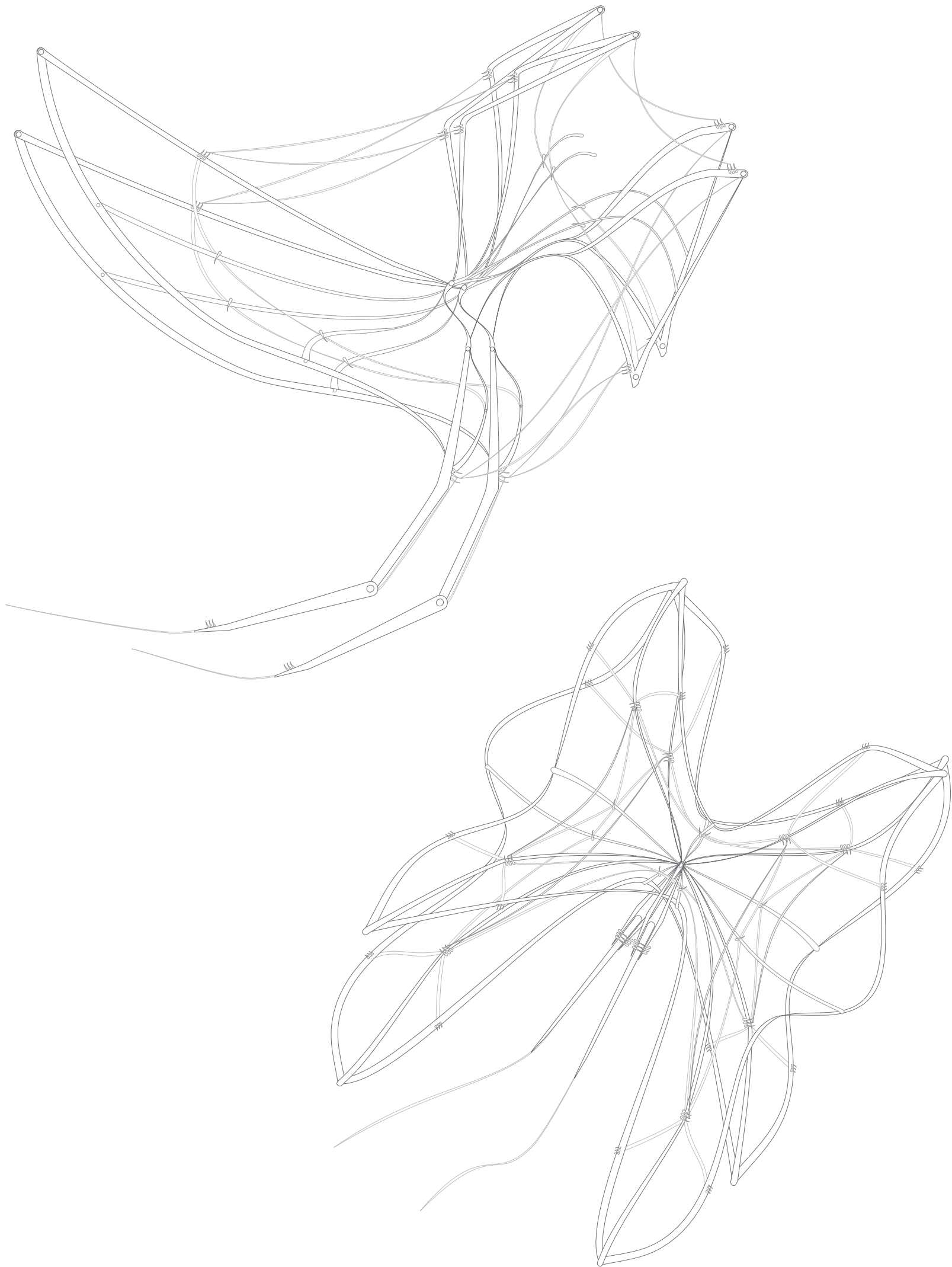
The rain calabashes are composed of two elements: a willow or bamboo frame holding a sponge body covered with a horticultural fleece. The sponge body absorbs rain or water percolating through the ruin while the fleece protects the sponge from frost and insects. These calabashes participate in modifying the ruin's shape: hung onto specific places, their fluctuating weight applies tension that causes tears and shears in the ruin. They can be moved around by the building-grower (fig P.3.72).

The wind turbine is made out of a galvanized metal and bamboo structure, with wings covered with sphagnum moss sheets. Through a simple mechanism, it pumps up water from the city into the ruin to nurture its moss and plants. Plus it also helps maintain the ruin's level of humidity. It is frequently cared for by the building-grower as the city water is rich in calcite deposit that can clog the pumping system. The sphagnum moss sheets also collect dust and metal deposit drifting in the air that can later be analysed in a laboratory to monitor the surrounding air quality (fig P.3.73).

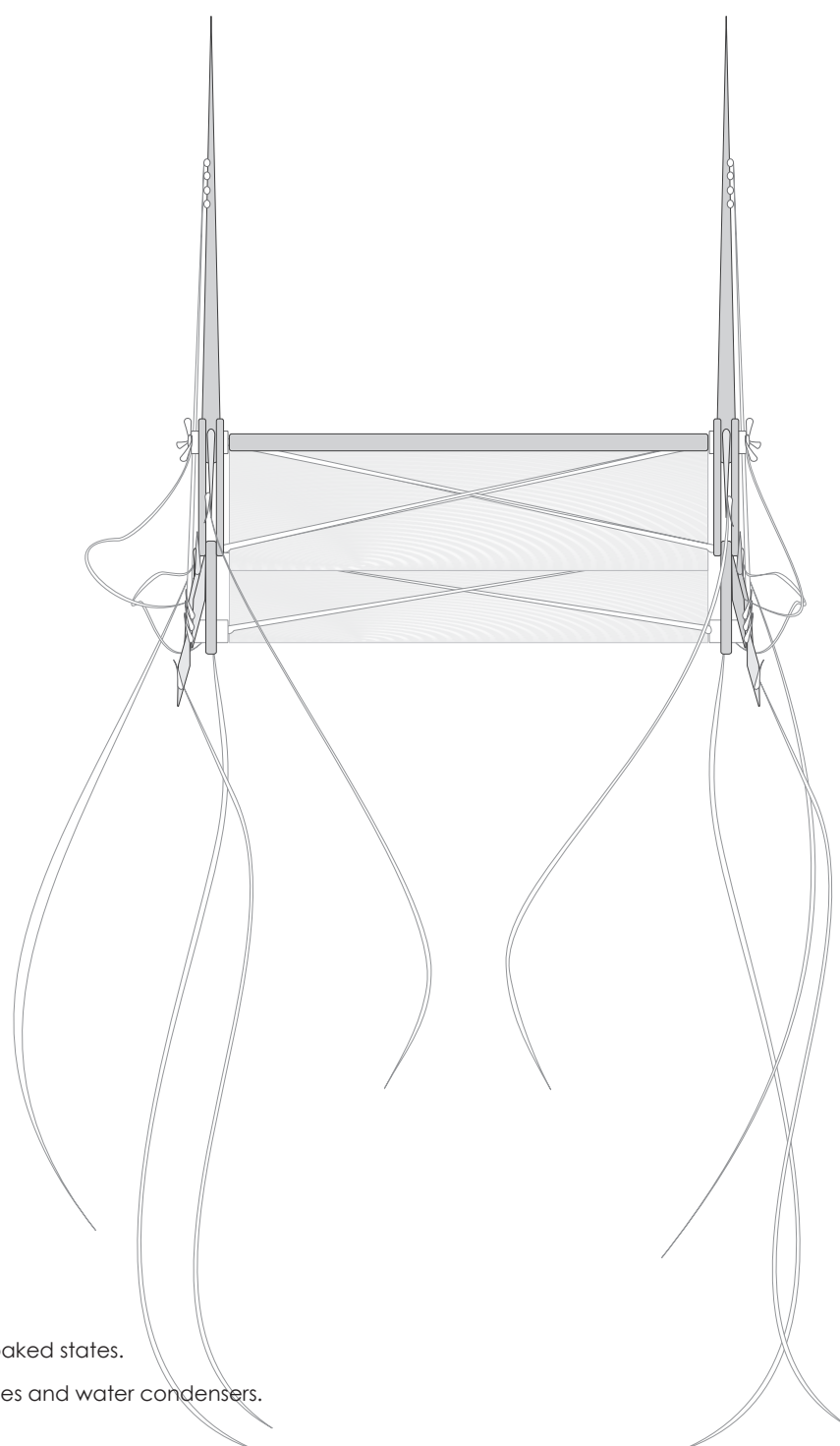
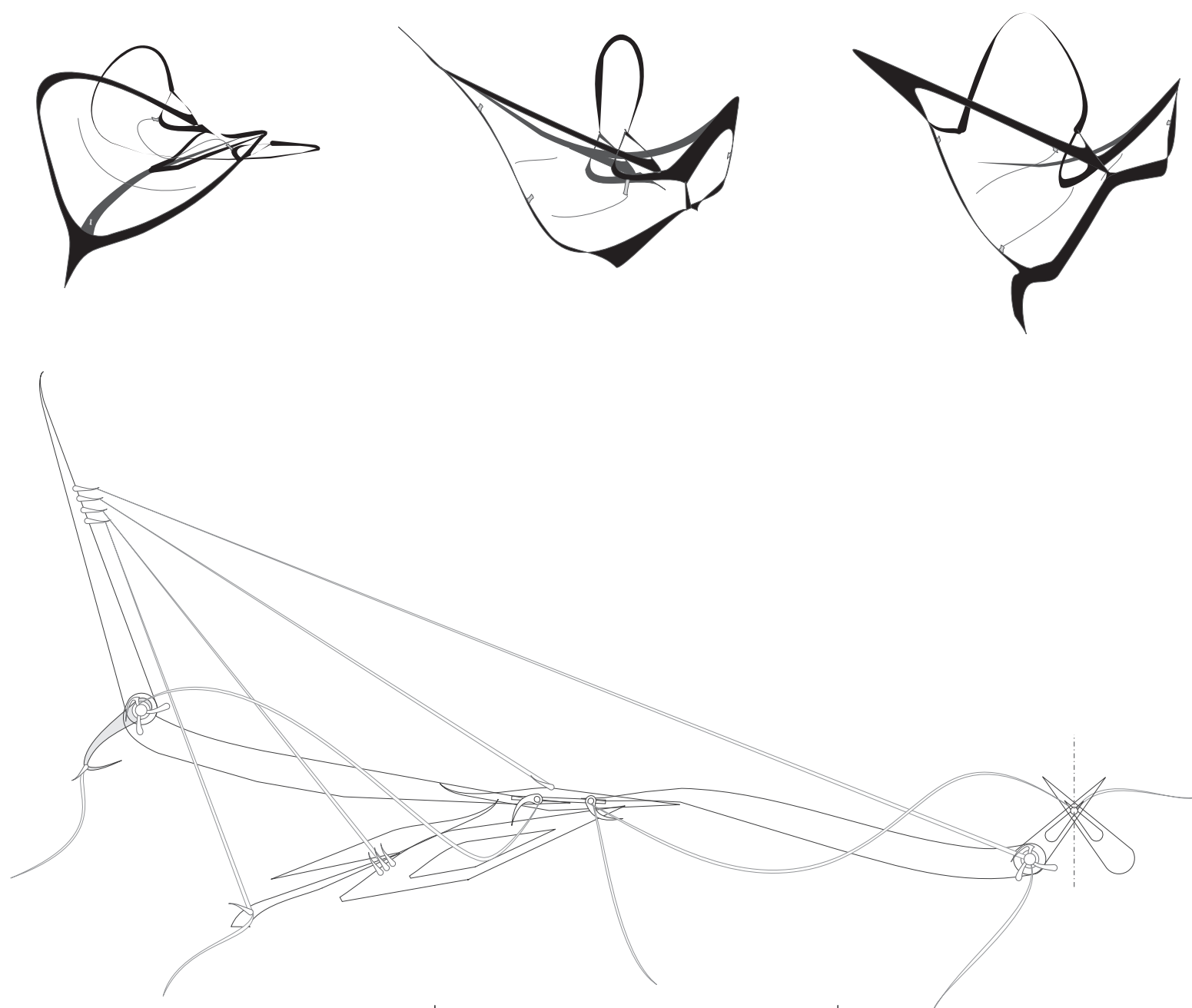
The water wheels are composed of a galvanized metal and bamboo structure allied with a textile made of sphagnum moss woven together with horticultural fleece. They are activated by the wind turbine to bring the city water up in the ruin. In the beginning, the wings are inefficient as the textile forming the wings or pockets is soft and lets water filter through. Yet in time, the pockets get slowly coated with a limestone layer, owing to calcareous deposits of city water accumulating in the fibres of the textile. Once they become too heavy to run smoothly, they need to be replaced by the building-grower (fig P.3.74).



The water sprinklers are watermills endowed with flat pockets waiting to be filled with city water pumped up by the wind turbine. They help maintain the level of humidity within the ruin. Once the pockets are filled, their weight triggers a mechanism that 'opens' the wheel and tilts the pockets into a position where water is released under high pressure, thereby creating a rotating movement of the water sprinkler. For the same reasons as for the water wheels, the nozzles and pockets need to be regularly checked by the building-grower. The wheel can have from eight to twelve pockets that can be individually dismantled and easily replaced. Each pocket can also be used as a sample to monitor the city's water quality (fig P.3.75).



P.3.67 Giant kites.



P.3.68 Water condensers in dry, wet and soaked states.

P.3.69 Flying bridge, connected to giant kites and water condensers.



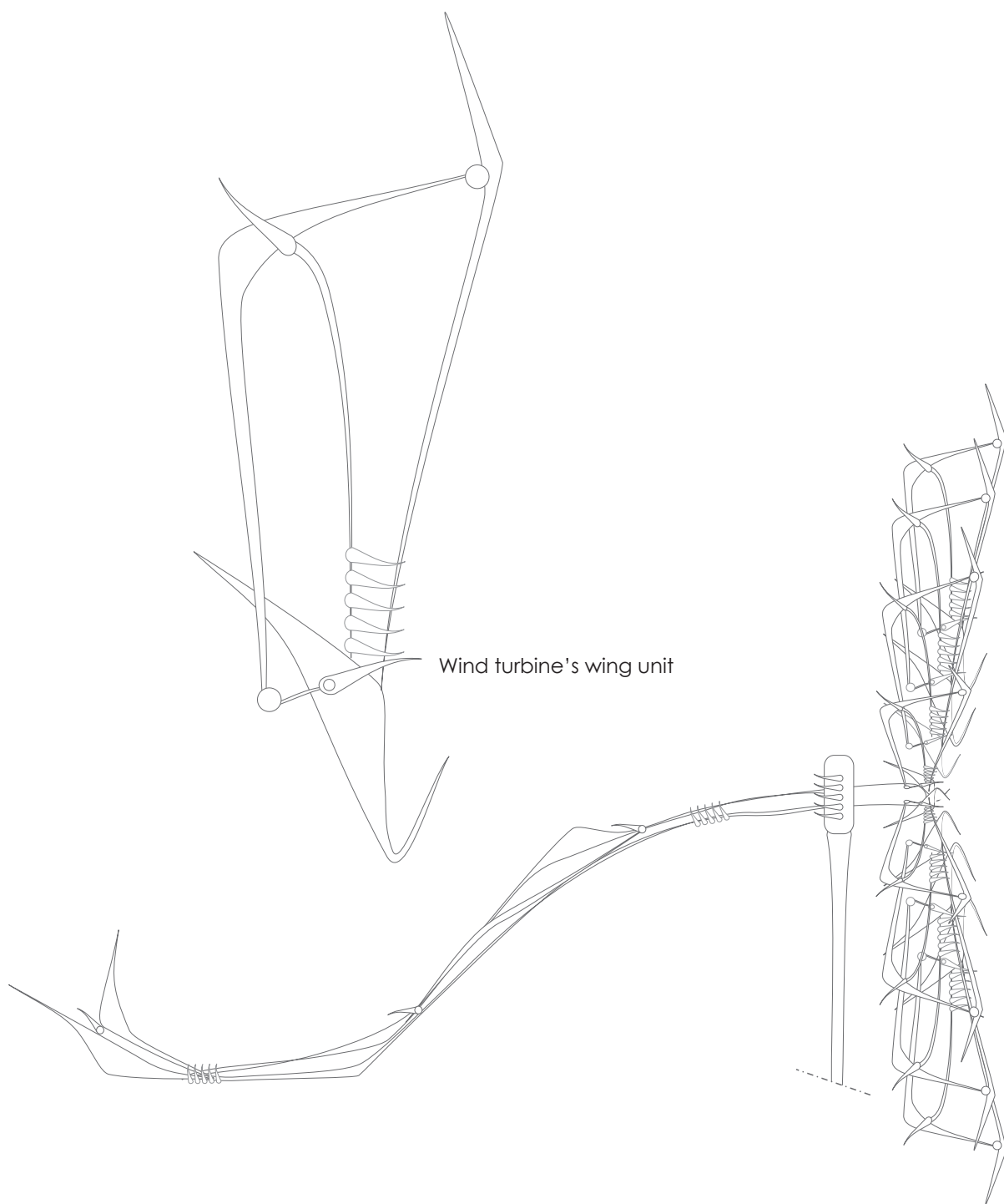


P.3.70 Tending fans and panoply of alternative gardening tool heads.



Articulated arm unit

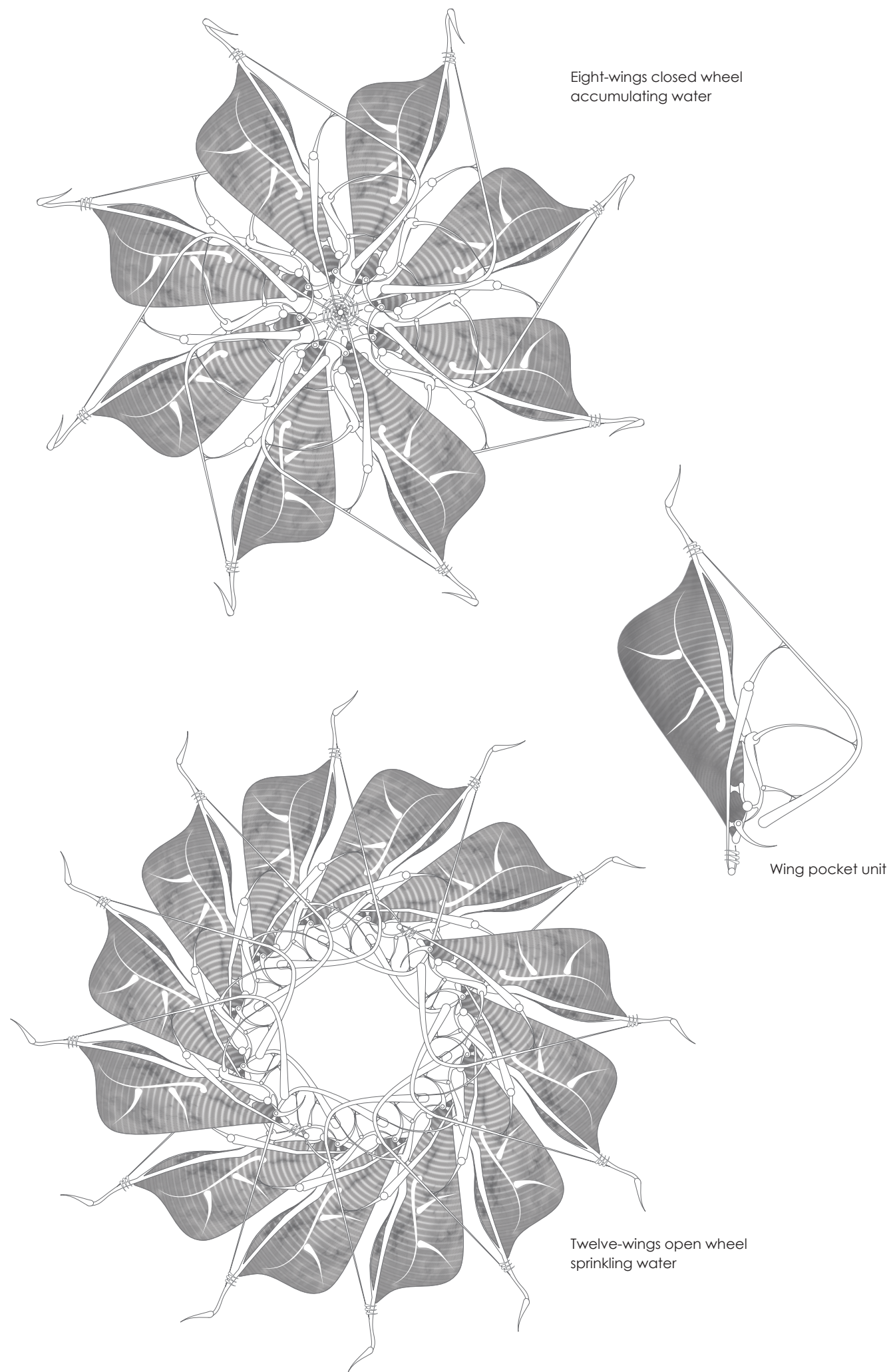
P.3.71 Articulated arms and their arm unit.



P.3.72 Rain calabashes.  
P.3.73 Wind turbine.



P.3.74 Water wheels and their wing pocket units.



P.3.75 Water sprinklers and their wing pocket unit.



## 5. Design development

The design of *Ruining a Ruin* evolved from the two poles of the project: the garden monoblock and the ruin. The garden monoblock's studies focalized on volumetric design and its connection to the CoR building whereas the ruin's studies concentrated on its sectional and textural design. At first, they were developed in parallel, independently of each other. Yet as they mutually informed each other's design, they progressively converged towards the same image of the garden monolith. The project mostly proceeded through sketches and models drawn alternately by hand and by computer. The gap between hand sketch and computer graphic was later overcome with a digital pen and tablet that allied the fluidity, lightness and spontaneity of the hand to the rigour, precision and scalelessness of the computer.

### 5.1 Initial study

#### 5.1.1 Monoblock

The monoblock is initially developed by manipulating several working models made from a chunk of floral foam, because the latter offers a mass which already embodies the monoblock while its soft material enables quick and easy cuts or punctures to create passages and spaces. The ensuing result is then transposed onto a Rhino computer model (figs P.3.76–79). The monoblock is transpierced by a hollow vertical core acting as a backbone onto which passages or spaces are branched. Some apertures are oriented towards the street to let pedestrians catch a glimpse of the monoblock's interior. Others are located at the back to create sporadic connections to adjacent buildings. A side indentation crosses the monoblock at the level of the CoR courtyard to extend it within the monoblock.

In parallel, hand sketches of the monoblock are drawn independently of the foam models to describe its volume and arrange its space and connections in relation to streets and the CoR building's courtyard, access doors, terraces and roofs (fig P.3.80). Unlike computer models, here the pressure applied on the brush-pen generates diverse line types which nurture my imagination. They also give the monoblock a soft mood and enable it to suggest the prospect of a textured surface covered with moss (fig P.3.81).

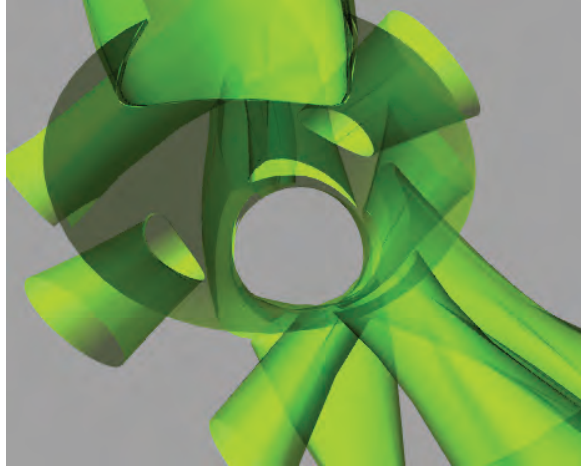
#### 5.1.2 Ruin

Keeping in mind the alveolar materials involved in the project, I imagine a ruin that presents a similar structural morphology, composed of various cells that swell or sag following its interaction with water. Those physical reactions are better shown on a section than a plan as the section enables gravity and vertical movement to be conveyed in addition to horizontal expansion. In this respect, the ruin is developed by focusing on a section of an imaginary ruin.

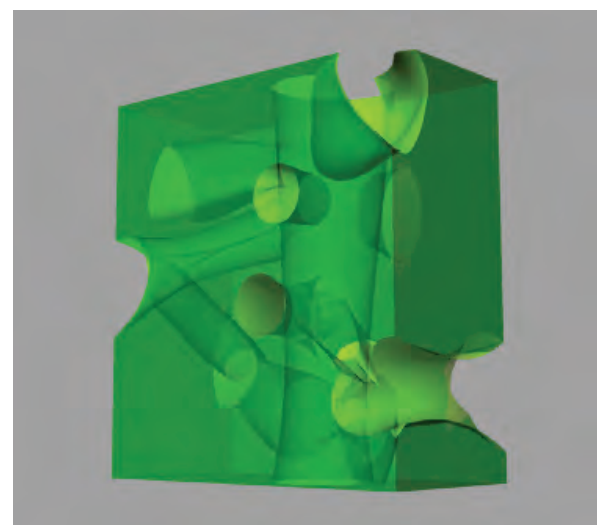
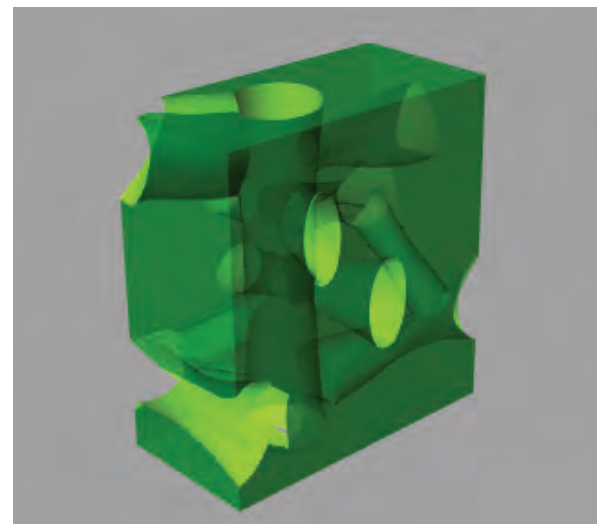
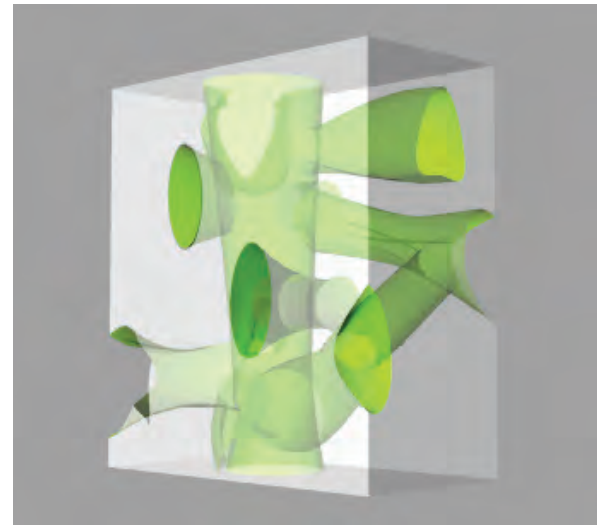
First-hand sketches mostly emphasize the organic cell composition of a ruin (fig P.3.82), yet the materials' integration within this spatial configuration is still unclear. The next batch of sketches attempts to remediate this issue by conveying diverse material textures that expand with water or compress under the weight of the ruin. The ensuing cells' spatial deformations and surface topography are also suggested (fig P.3.83).



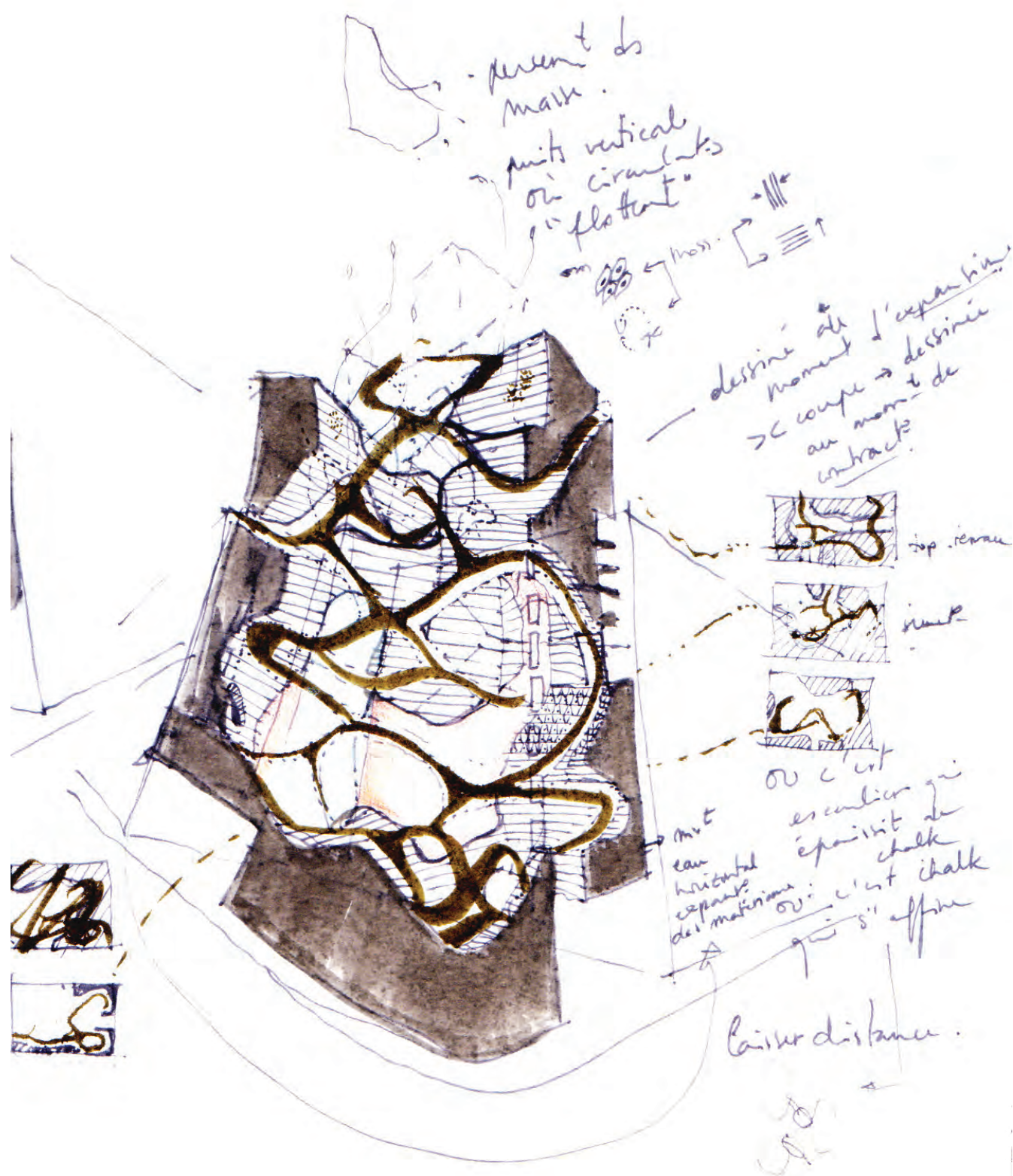
P.3.76



P.3.77-79



- P.3.76 Working Rhino computer model, top view into the core of the monoblock.
- P.3.77 North-west corner of the monoblock visible from rue Belliard.
- P.3.78 South-west corner of the monoblock visible from rue du remorqueur.
- P.3.79 South-east corner of the monoblock visible from the CoR's courtyard.





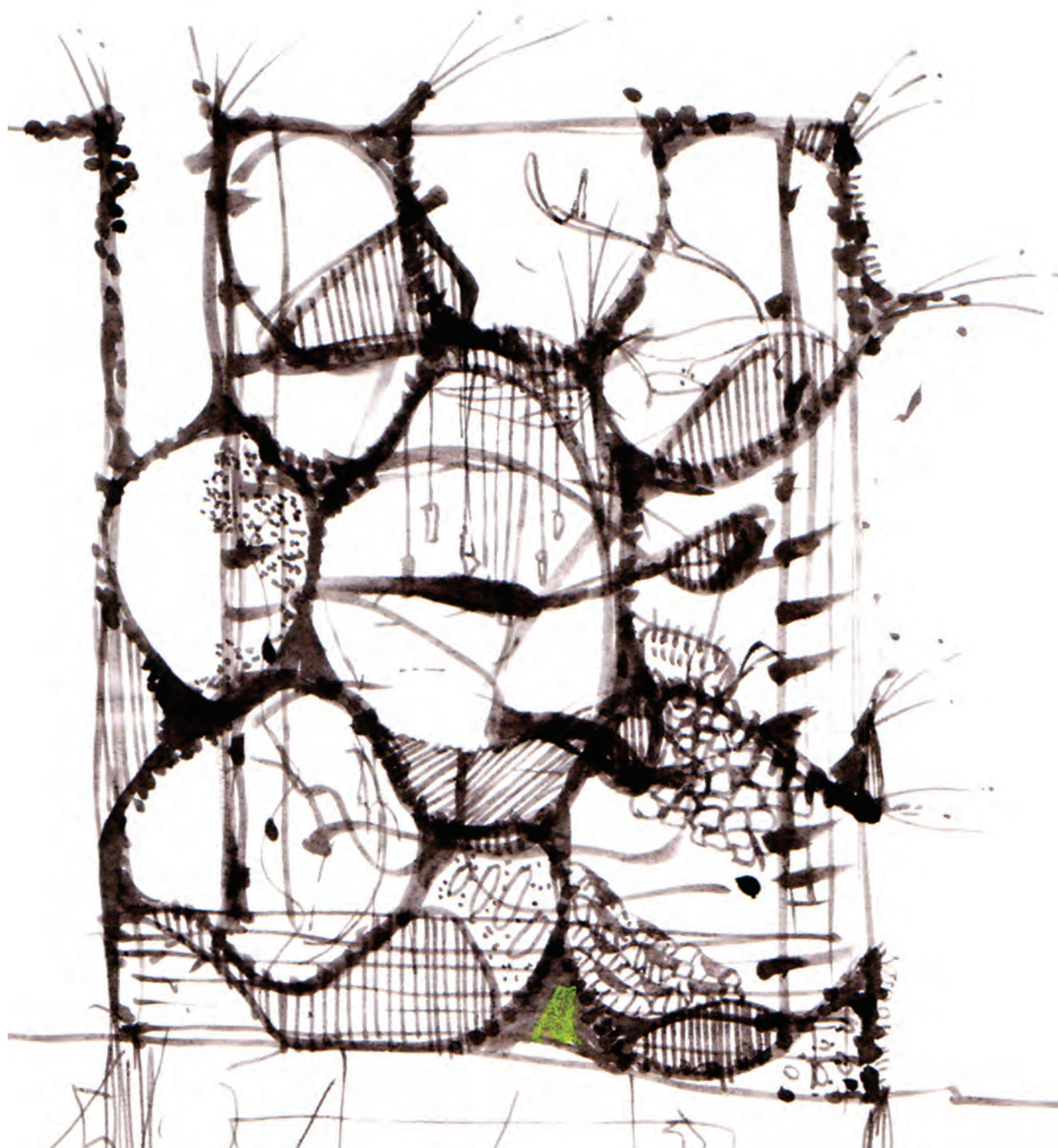
P.3.81



P.3.81 Hand drawn study of diverse textures applied on the overall volume of the monoblock.



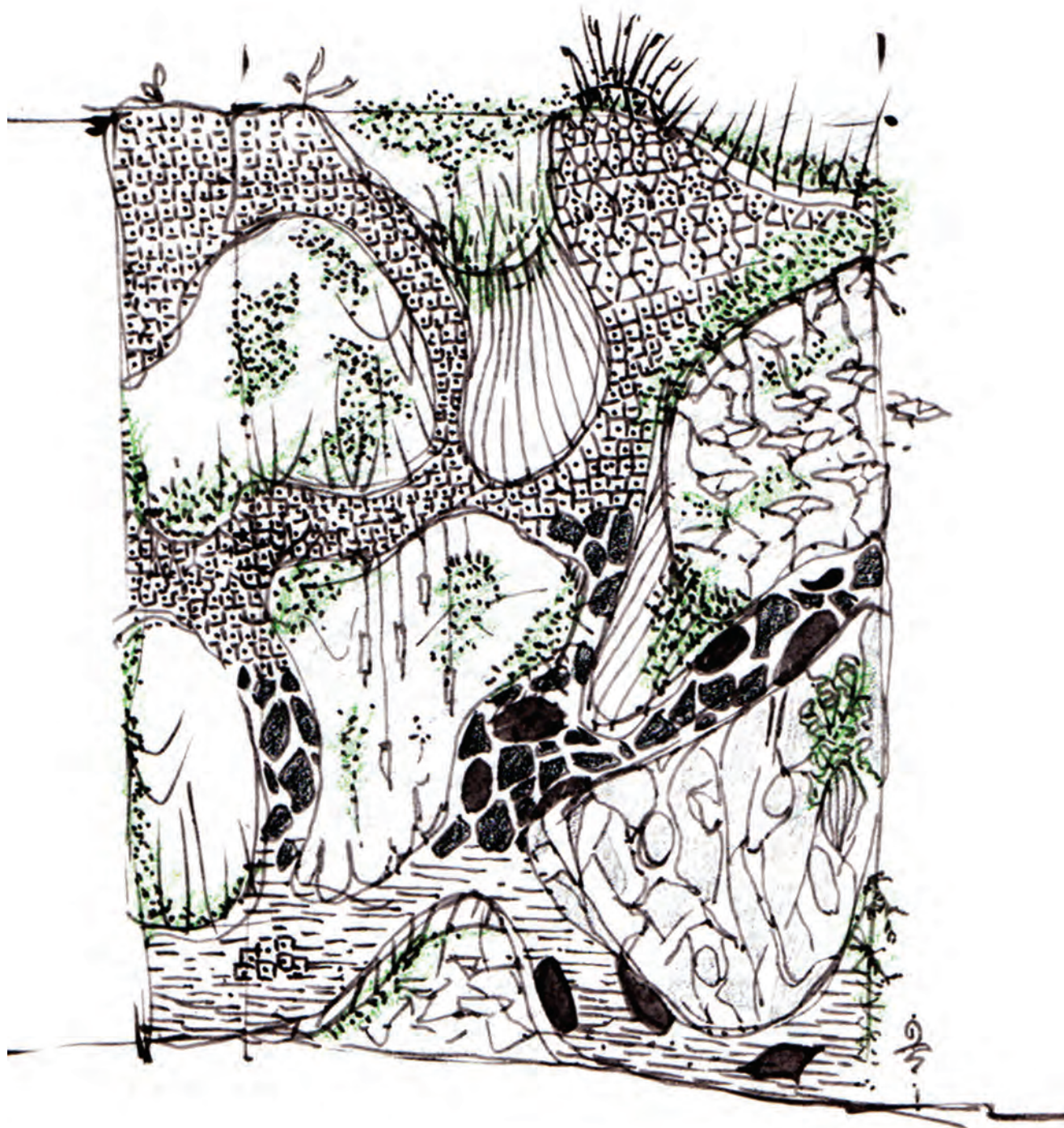
P.3.82



P.3.82 Hand drawn section describing spatial study with the distribution, expansion/contraction and connection of the monoblock's various chamber cells.



P.3.83



P.3.83 Hand drawn section portraying diverse textures and materials found in the garden monolith.

## 5.2 Reciprocal influence – adjustment

### 5.2.1 Monoblock

Following the ruin's flexible spatial composition, the monoblock's design revises its spatial choreographic sequence and its connection to adjacent buildings. At the same time, the monoblock attempts to anticipate and incorporate the materials' physical reactions within its volume.

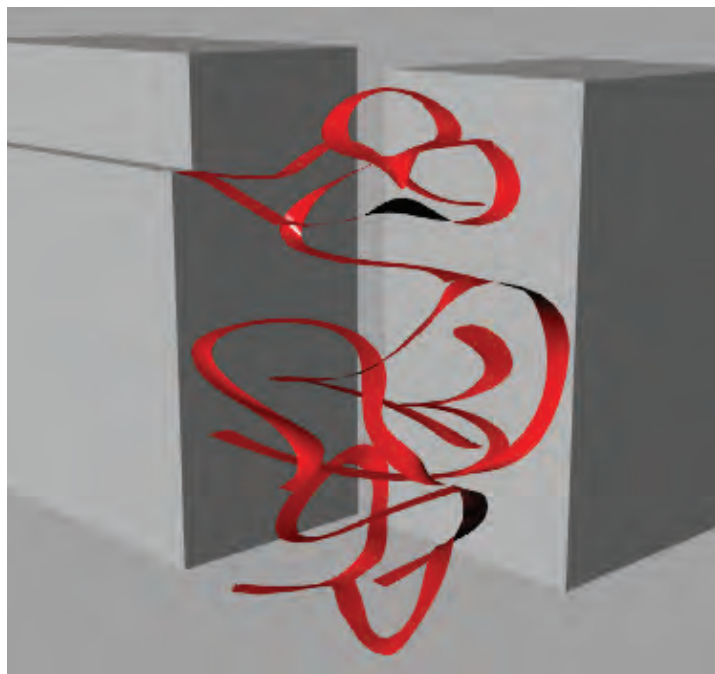
### 5.2.2 Ruin

The monoblock's computer model provides precise dimensions of the site and exact positions of adjacent buildings' potential connections (figs P.3.84–85). The ruin's cell sizes and locations are then appropriately adjusted to fit these data and to fit the overall volume and section of the monoblock (figs P.3.86–88). The section is further drawn according to different layers called syntactic, topographic, climatic and mechanic, following the factors that transform the soft monoblock into a solid ruin.

The syntactic layer exposes the structural frame and the spatial composition within and around the frame. This constitutes the initial backbone of the monoblock which is lithified into ruin in the long run (fig P.3.89). The topographic layer represents the section's topography through time, where spaces appear or disappear following the monoblock's decaying process (figs P.3.90–91). The climatic layer registers the alveolar materials' physical reactions to weather conditions through arrowed lines indicating shrinkage, swelling, crumbling, accumulation, deposit, breakage, etc. It also points out the appearance and disappearance of connections and cells following those material transformations (fig P.3.92). The mechanic layer shows the location and type of weather instruments involved in the acceleration or deceleration of the monoblock's erosion (fig P.3.93). All the previous layers are overlaid to create the final section: the ruining monoblock builds up a ruin which naturally mutates in its turn into an-other under the influence of climate, weathering instruments, users and CoR building (figs P.3.94–95).



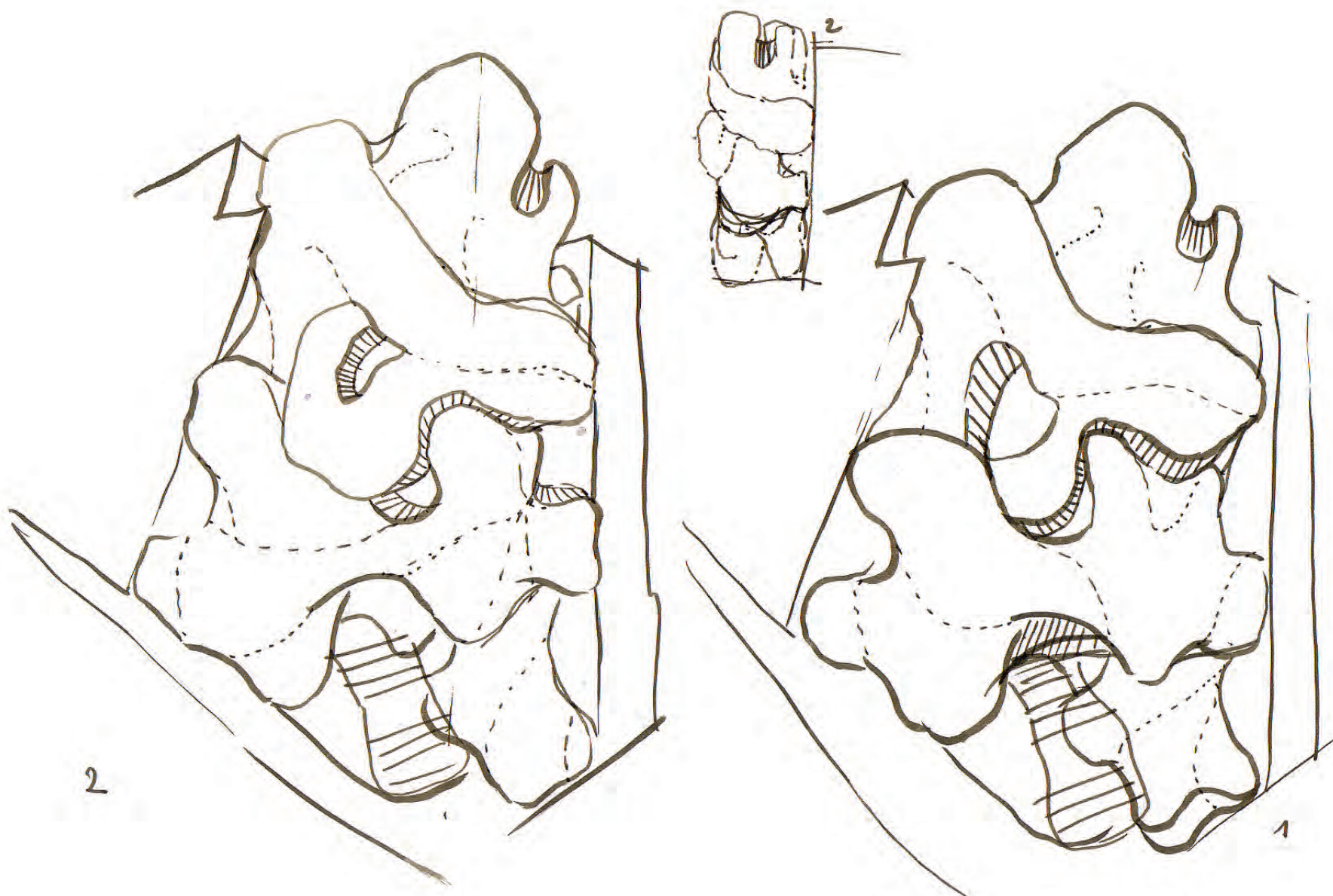
P.3.84



P.3.85



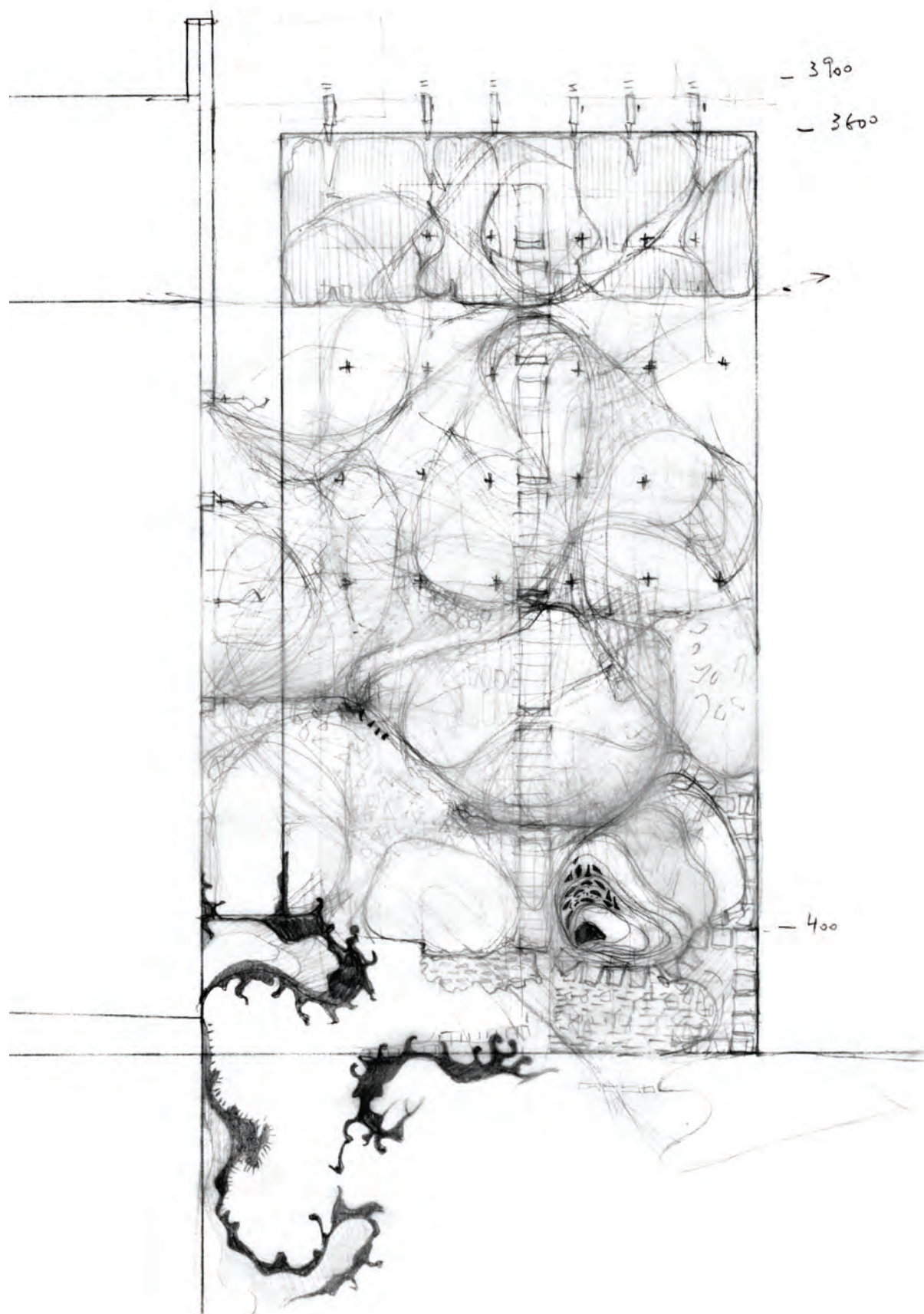
P.3.86



P.3.84–85 Working Rhino computer model of the garden monoblock's connections with the adjacent CoR's building.

P.3.86 Hand drawn monoblock's volumes following the computer model's metric and sectional adjustments.

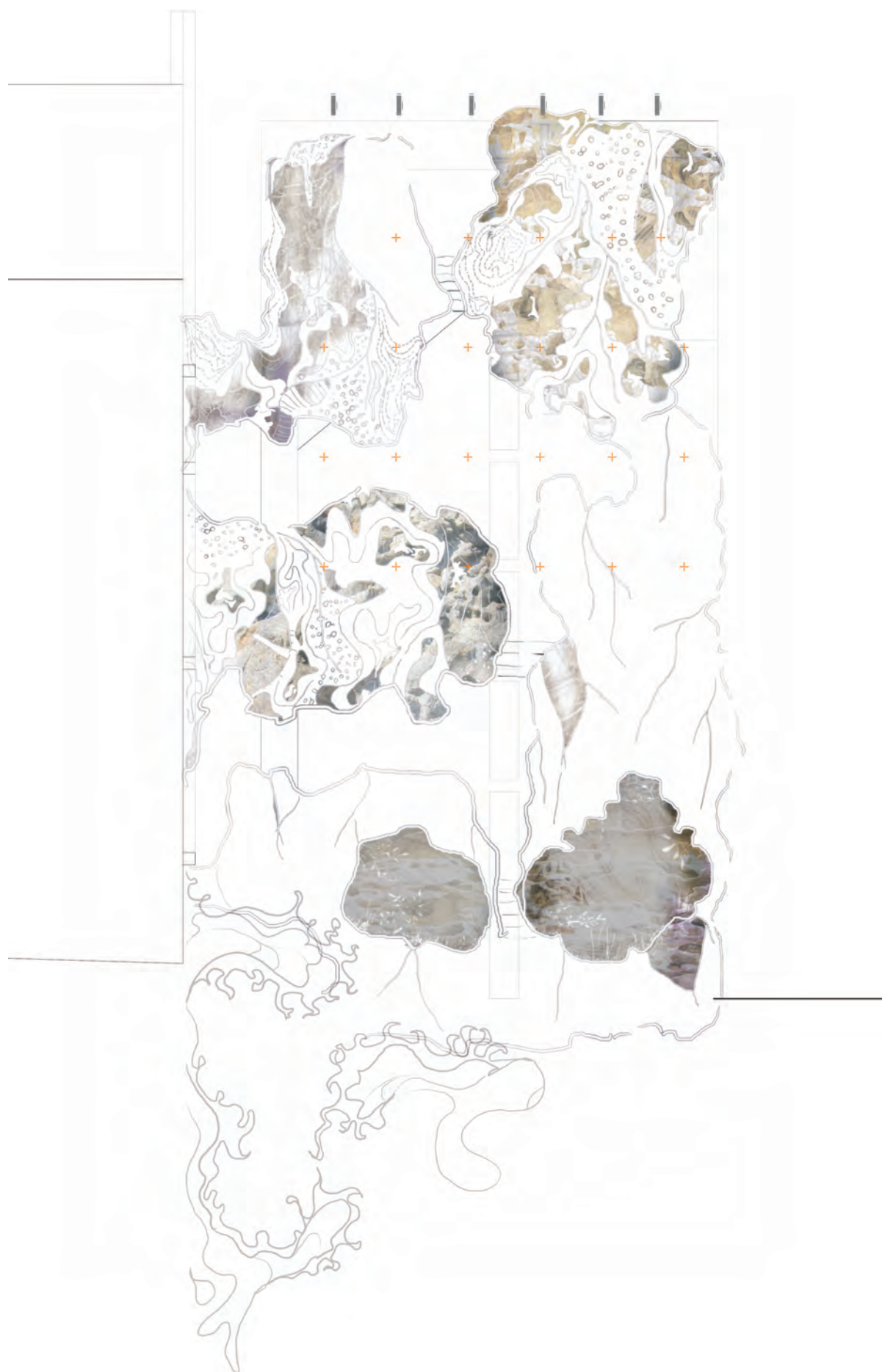
P.3.87



P.3.87 Hand drawn section studying the chamber cells' organization of the garden monoblock following the computer model's metric and sectional adjustments.

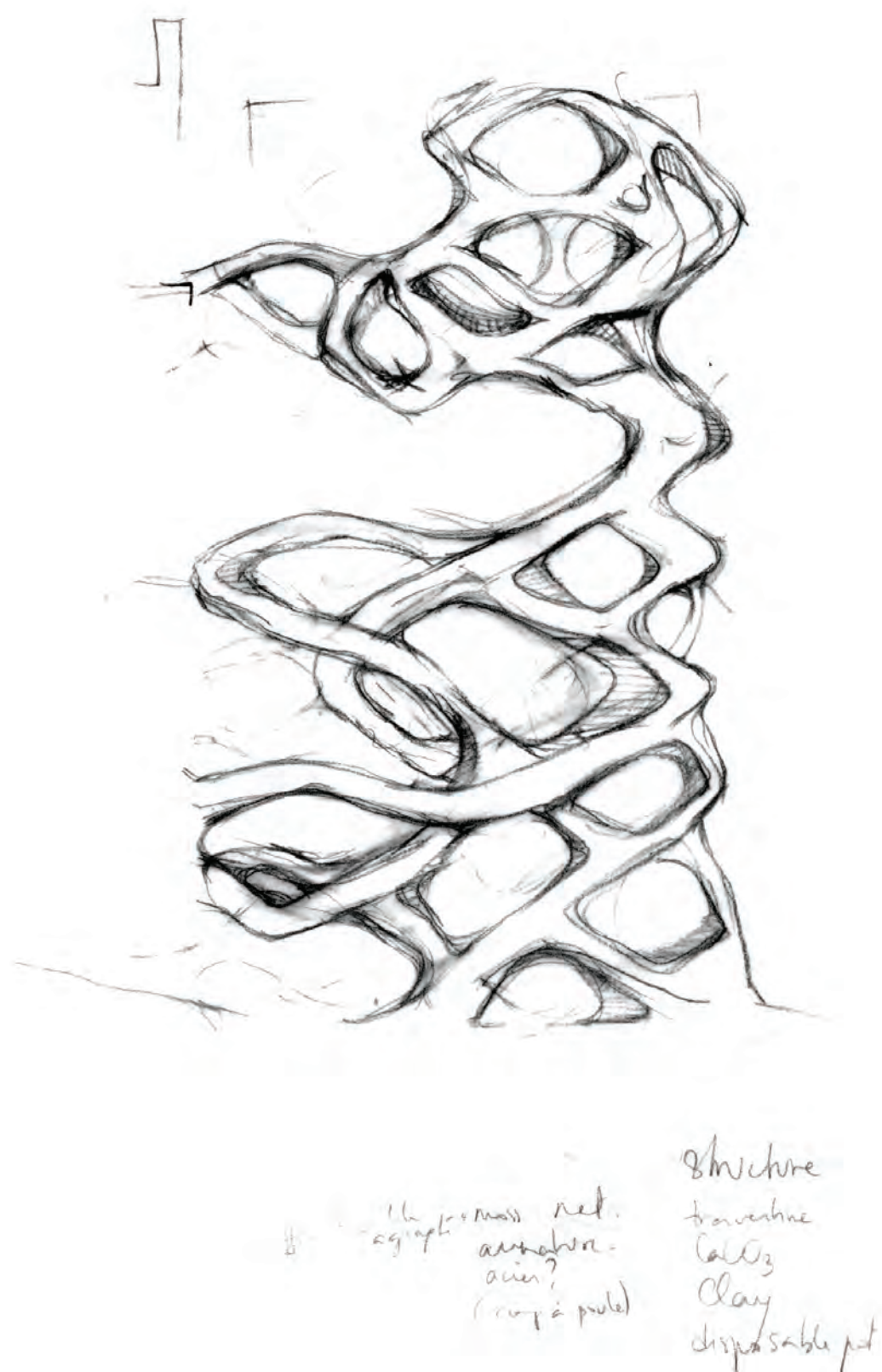


P.3.88



P.3.88 Hand drawn section studying the materials' lithification of the garden monolith following the computer model's metric and sectional adjustments.

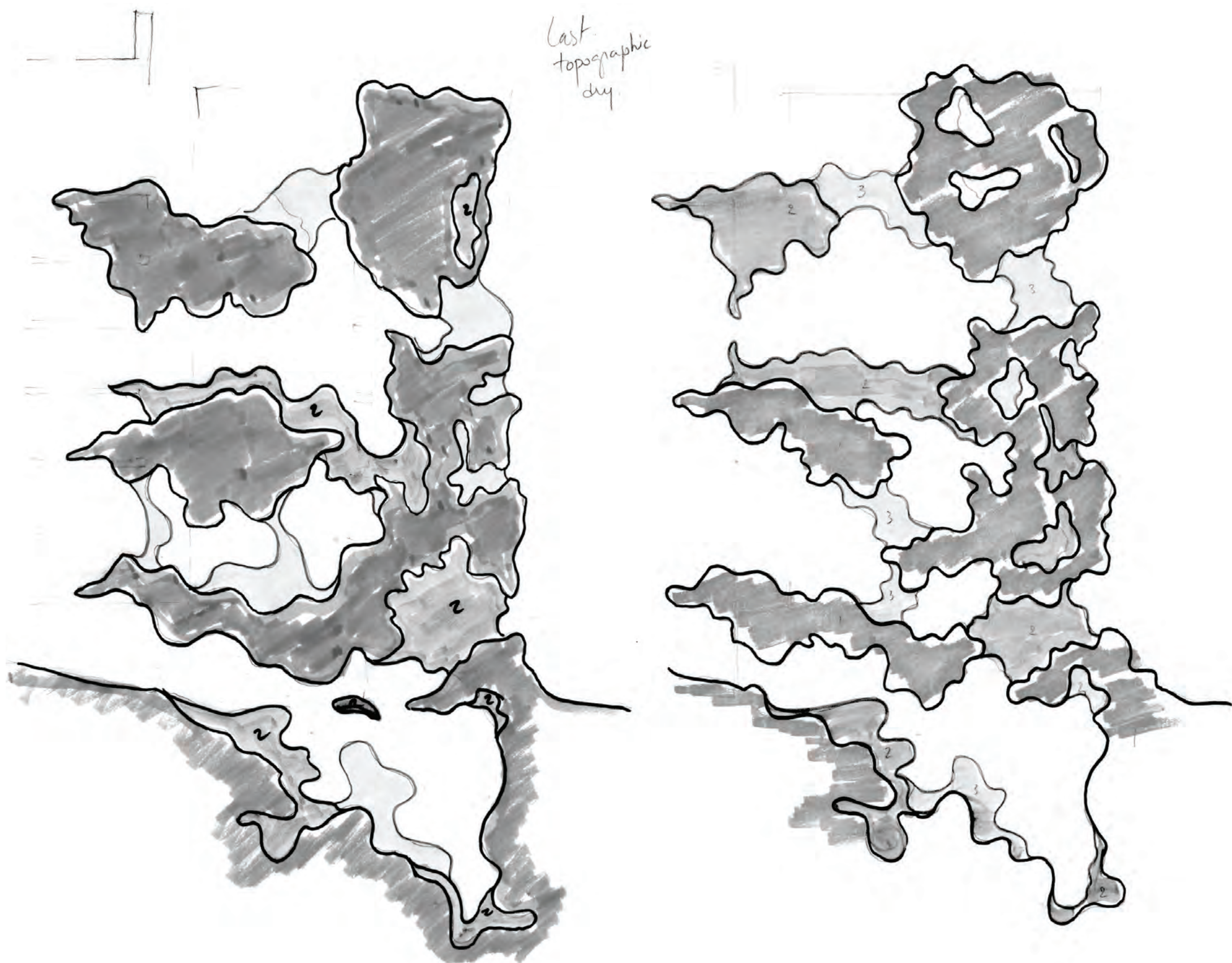
P.3.89



P.3.89 Syntactic layer defining the internal circulation, external connections and structural morphology of the project.

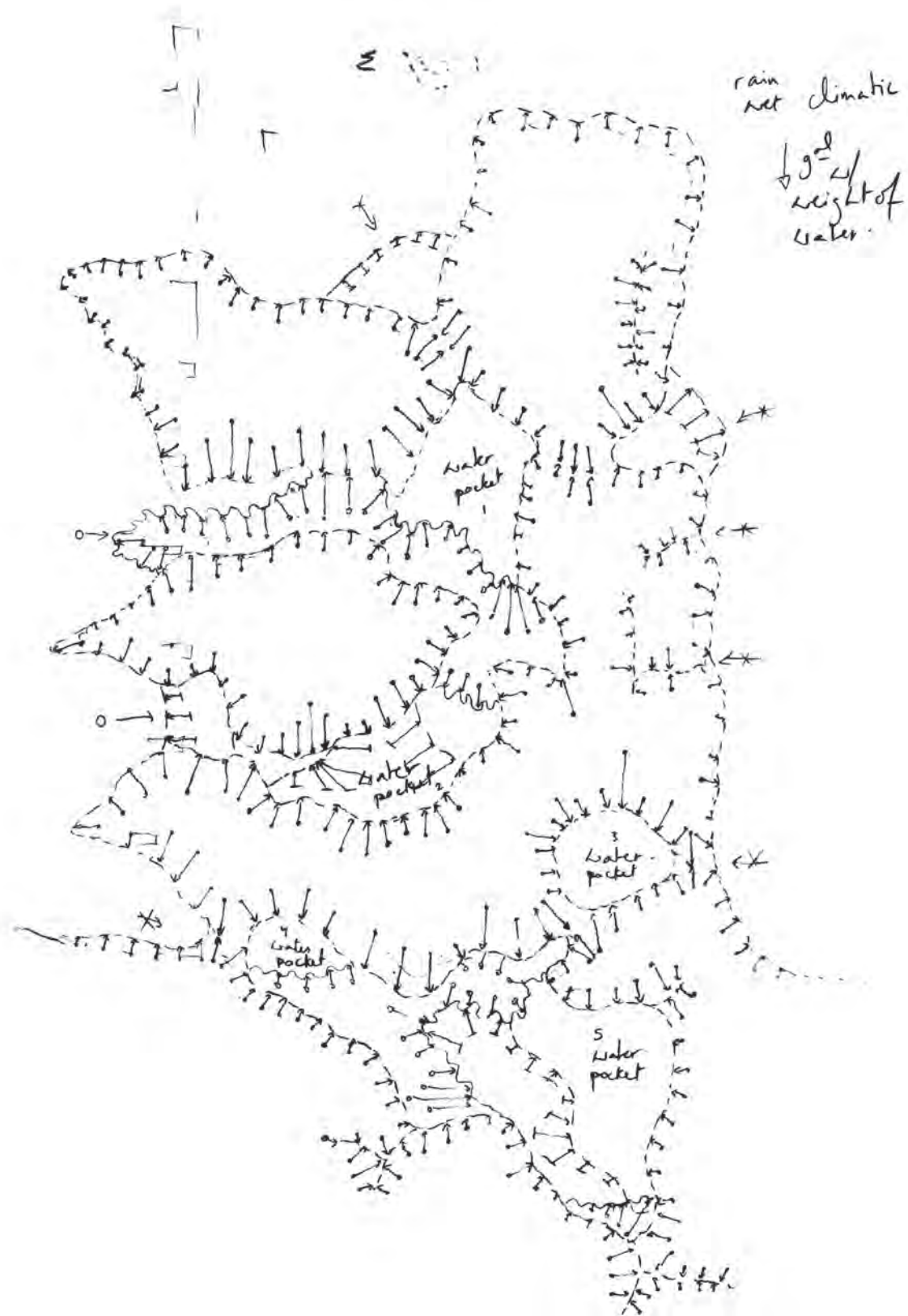


P.3.90-91



P.3.90-91 Topographic layer showing the section's morphologic and topographic decay through time.

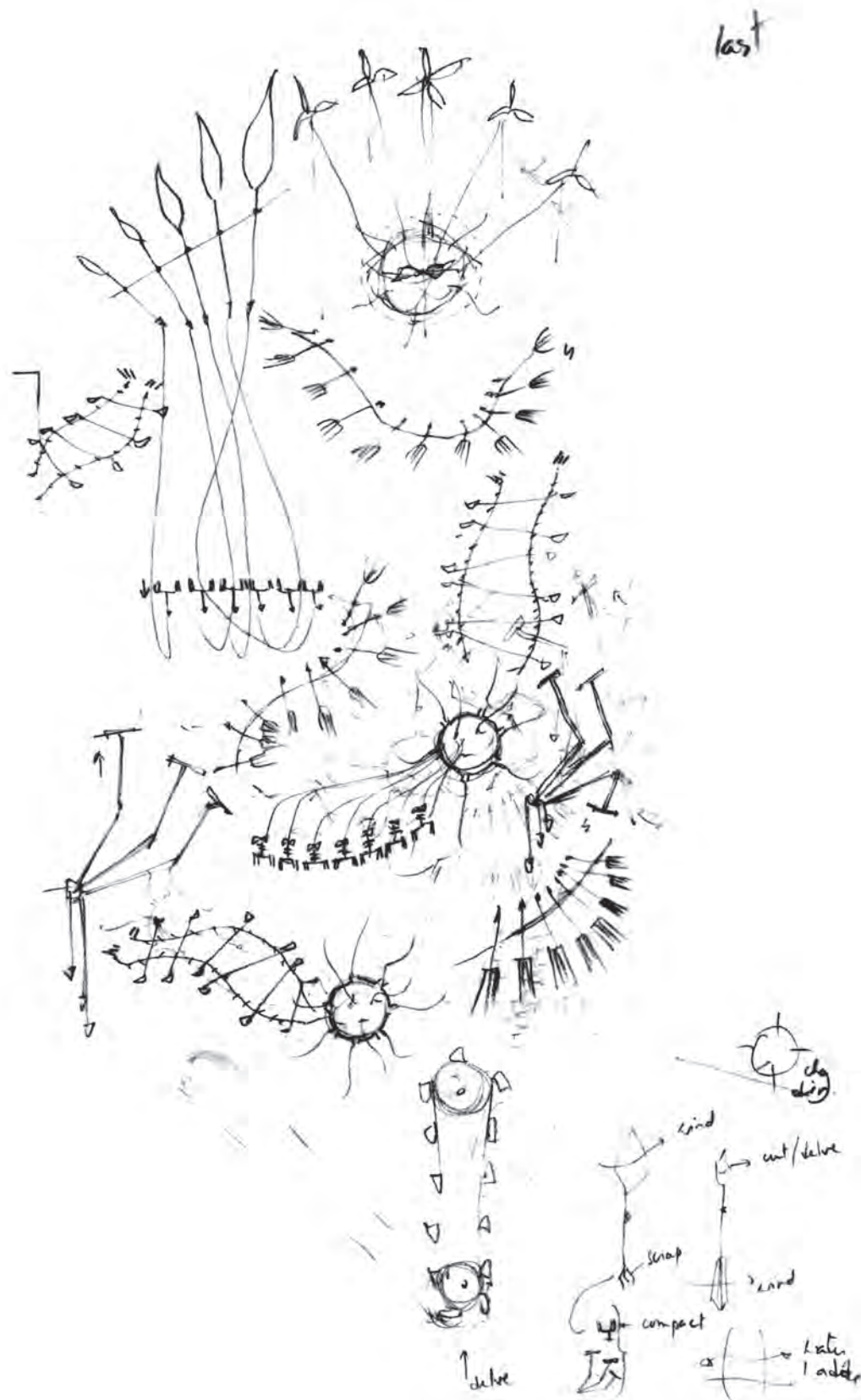
P.3.92



**P.3.92** Climatic layer emphasizing the expansion/contraction of the garden monoblock under the climatic influence.



P.3.93



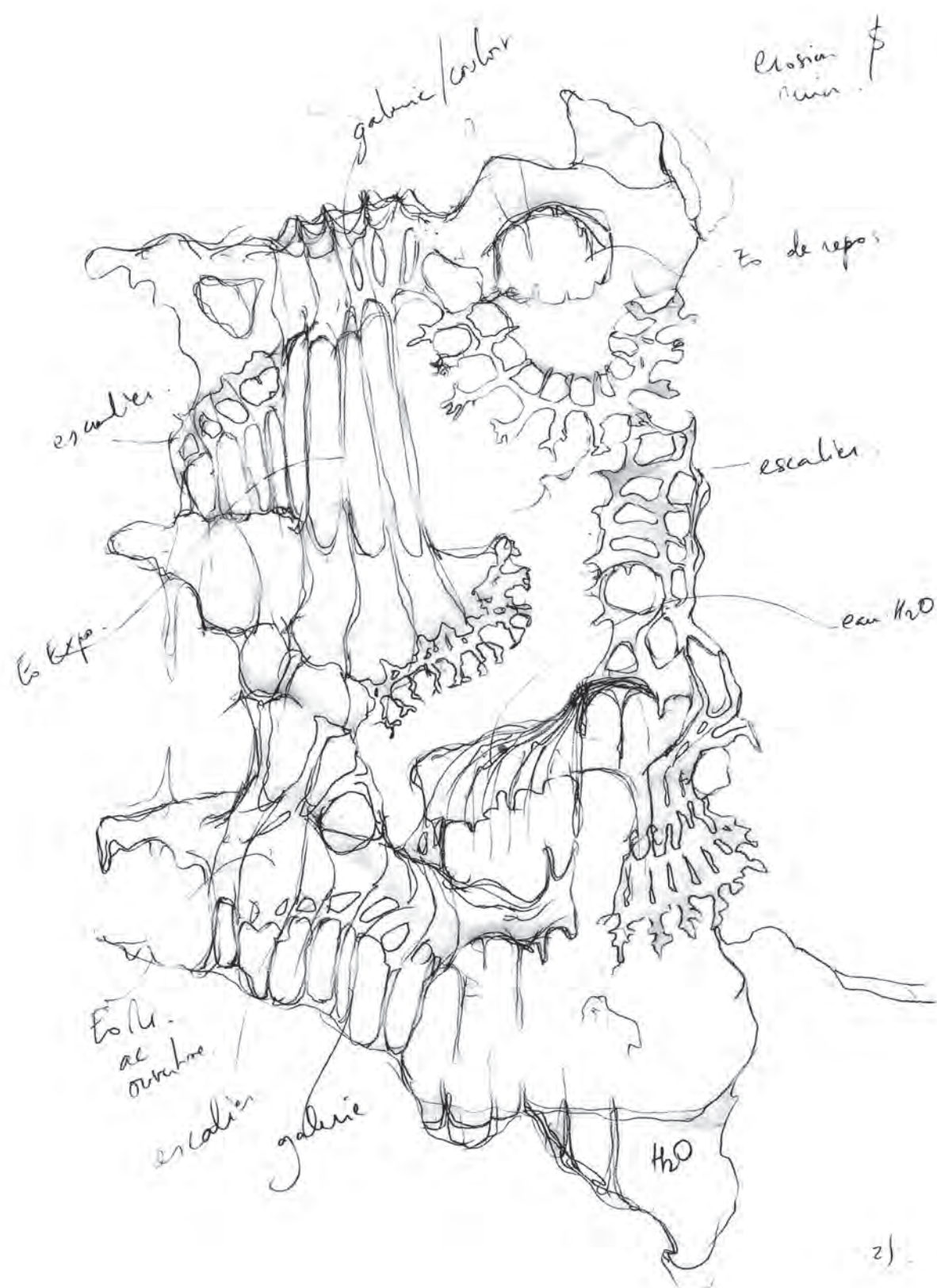
**P.3.93** Mechanic layer illustrating the position and interaction of weathering instruments within the project.

P.3.94



P.3.94 Superposition of all the previous layers in order to epitomize the ruining principle of the section.

P.3.95



P.3.95 Ruinous section of the garden monolith following the combined effects of all the previous layers.



### 5.3 Convergence

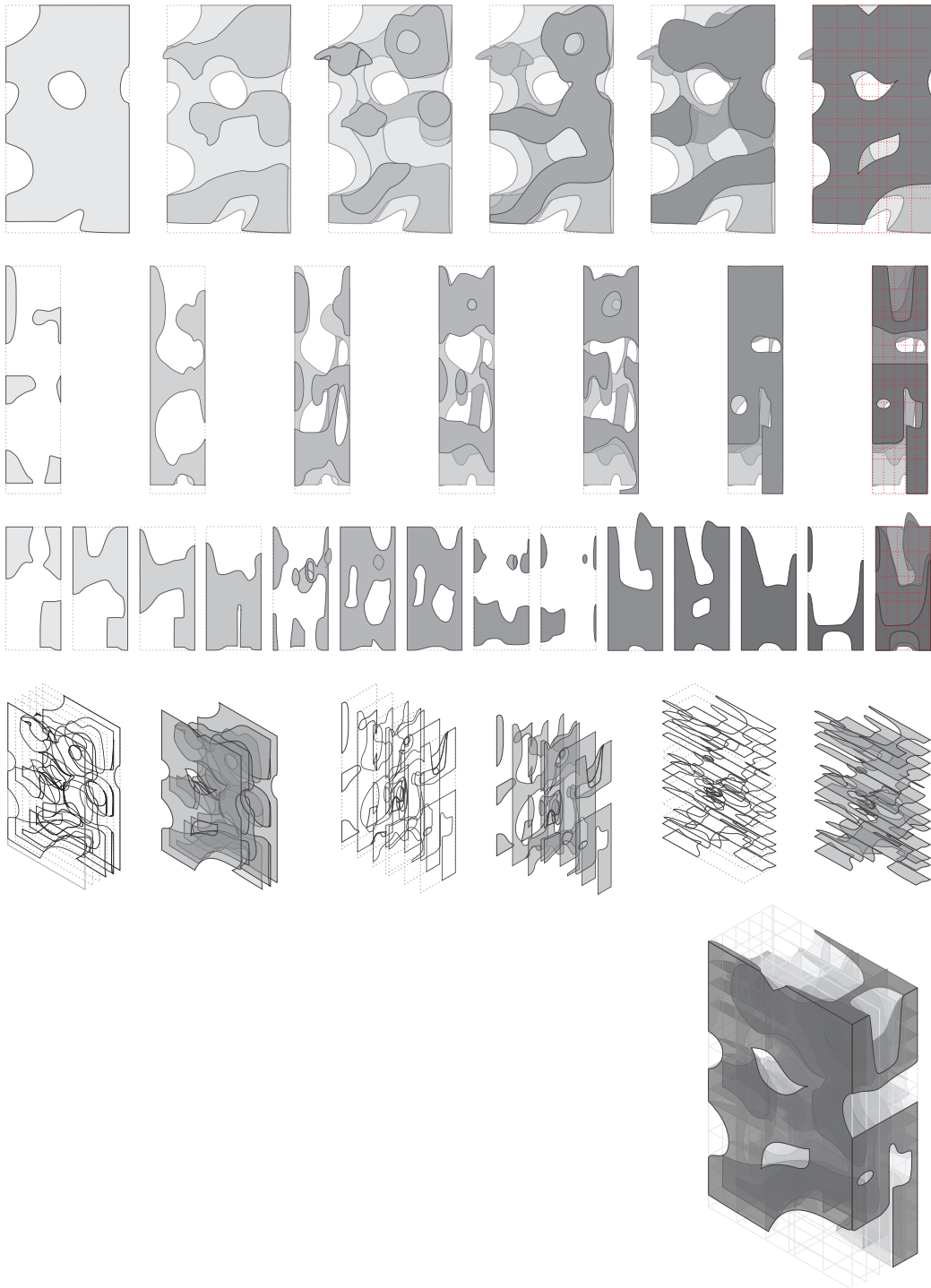
The monoblock's volume and the ruin's syntactic and topographic layers can be combined to conceive the original monoblock's volumetric composition, spatial arrangement and connections to the CoR buildings. This could be presented as a diagrammatic mass study to give an overall view of the project. This is drawn to scale then 'scanned' through a series of long sections, cross sections and plans (fig P.3.96).

Textural sketches complete the previous section's description by representing the osmosis of all alveolar materials through time. The first sketch describes the texture of the monoblock's surface found under the plants and moss blanket (fig P.3.97). Details such as sponge, fossilized moss and cells of open-cell foams can be distinguished. The following sketch represents the texture of the monolith's section which enhances the calcification of material components and plants' roots (fig P.3.98). Drawings are kept blurry on purpose to stay in the zone of the indefinite, unsettled, between reality and imaginary.

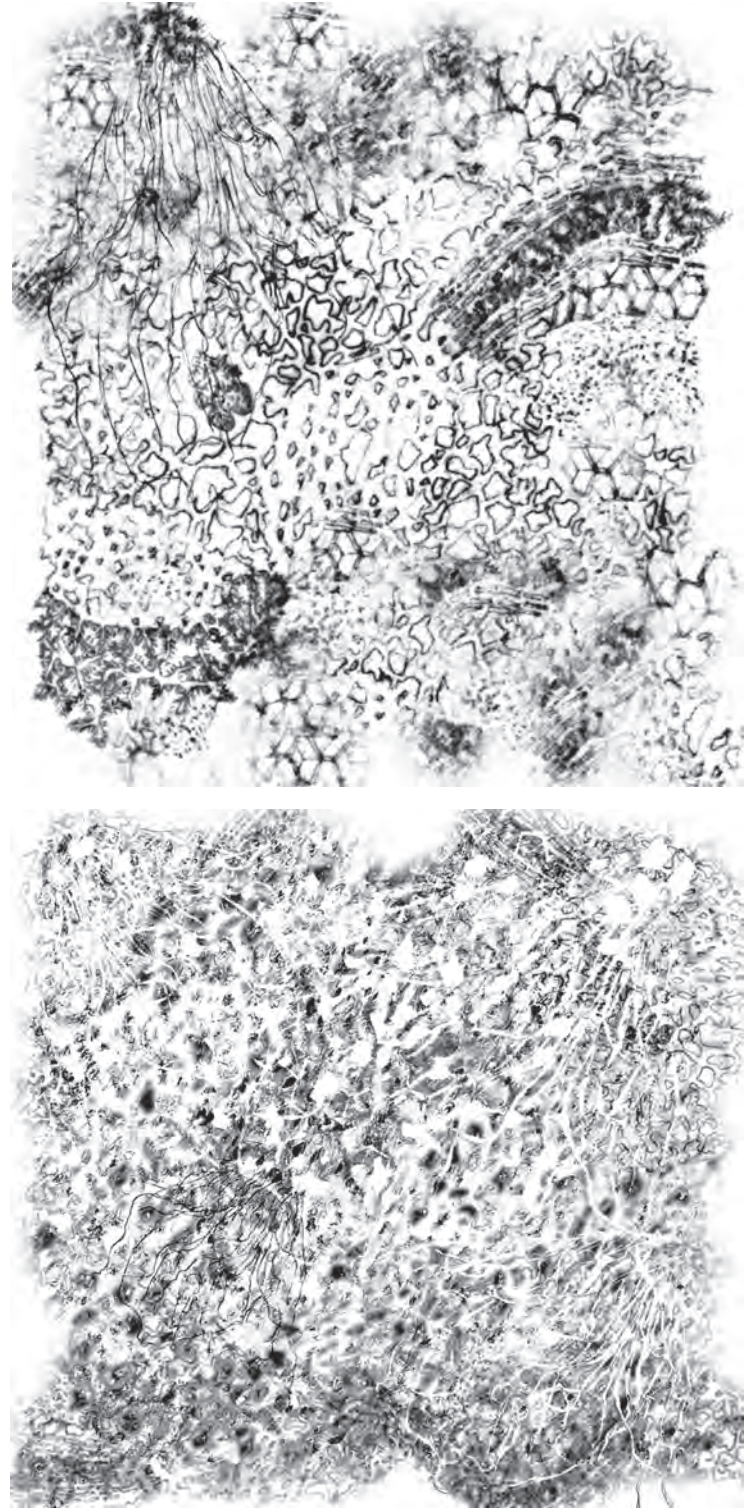
During this design development, I see myself drawn into those sections more than into volumetric studies. In fact, the latter don't leave much scope for the viewer's imagination as the project appears as an object presented in its whole. By contrast, the section only shows a particular area of the project on which the whole attention of the viewer is focused. In this respect, the section acts as a vertical probe into my project as it requires to be drawn in all its details and complexity. Yet, it is paradoxically this profusion of precise details that triggers the viewer's imagination. In consequence, I decide to work and depict the project mainly through section.

The monoblock is depicted in interaction with its surrounding environment, its fauna and flora, as those are the incentives starting the mutation process of the monoblock. The ruin is presented through its hydrology as water affects the ruin's topography through the building of travertine. The garden monolith is shown not only through the evolution of time slowly decaying from monoblock to ruin, but also at various scales and moments in time.

P.3.96



P.3.97-98



P.3.96 Diagrammatic series of the long/cross section and plan of the final monoblock.

P.3.97 Monoblock's texture.

P.3.98 Monolith's calcified texture.

## 6. Representation of Ruining a Ruin

### 6.1 Method of representation

In reference to the incompleteness precept of the oriental void, the project is deliberately never shown in its entirety to keep its living breath intact. Its outputs are scattered among A1 format drawings, viewer's manual, videos and handscrolls. Taken separately, each of them reflects a particular aspect of *Ruining a Ruin*, but brought together they complete each other, assisting the viewer to grasp the project in its whole, in-between imaginary and reality. The viewer becomes thereby the project's last component who transforms my project into his own. In this manner, *Ruining a Ruin* becomes more than a garden monolith grown as a plant by its building-growers. It acts as a seed planted into the viewer's imagination that grows beyond the context of my thesis into an-other garden monolith designed and tended by the viewer. This project transcends thereby its own being by becoming a myriad of other potential projects.

### 6.2 Influence of Chinese traditional landscape painting

Chinese traditional landscape paintings use flat, shadowless elevation where depth is expressed by blank gaps on the canvas. Those gaps also regularly interrupt or fade away brushstrokes, installing haziness in the painting. In this respect, crisp three-dimensional perspectives rendered by computers are discarded. More Chinese paintings apply monochromatism, not for aesthetic reasons but to avoid the viewer being distracted by colours. This choice forces me to draw things with care, accentuate the play of light-shadow and balance the positioning of elements into the overall composition. The paper on which the drawing is printed is a mulberry paper (fig P.3.99). The choice is guided by two main directives. The mulberry paper offers a texture that adds another layer of composition to the drawing itself, and it is more porous than regular printing paper so that lines, and thus drawings, appear softer. In this respect, the mulberry paper acts as a sort of metaphor for the moss. My intentions are not to faithfully reproduce Chinese traditional landscape paintings but to borrow their principle to draw a section of my project. I decided to work with a computer for practical purposes, but also because I enjoyed the idea of crafting evocative drawings by using a tool which is usually qualified as cold and impersonal.

### 6.3 Drawing panels

My drawings of the project are divided into two types: the evocative drawings and the scientific drawings. In keeping with the Taoist principle of bipolarity, those two sets describe the same project but from different vantage points, where the understanding of one assists the understanding of the other. The viewer's contemplation alternates between those drawings until equilibrium is found to build his vision of the project using his creative imagination.

The evocative drawings give an oriental atmosphere through their reference and composition but present a detailed rendering, reminiscent of occidental picturesque etchings. The scientific drawings convey dry and factual information, yet their fluid rendering is reminiscent of Chinese traditional landscape painting.

#### 6.3.1 Scientific drawings

This series describes the monolith section in an analytical and diagrammatical manner, rendering the invisible forces that shape the project. It appears as a practical explanation of the ongoing interactions between the project, its surroundings and its users.

*Ruining a Ruin's* interaction dynamics panel (fig P.3.100) represents the section of the original monoblock at year 2010 and a graph representing the nature of its biotic dynamics with climate, users, moss, plants and Brussels city. The section shows a textured area corresponding to light materials subject to faster decay and reveals inner spaces within the initial monoblock. It renders the tendering tools in a calligraphic style and indicates the rest of the garden monoblock behind the section with the corresponding weathering instruments. It represents the heat circulation through the project, the access from the CoR buildings and the street, and the areas of inhabitation of each insect, bird and the plantation line for bio-indicator plants and moss (figs P.3.100, a–b). This drawing is to be read in relation to the tending calendar (fig P.3.111).

*Ruining a Ruin's* process of becoming panel (fig P.3.101) is made at 1:100 scale and depicts the evolution of an ageing section of the monolith over a period of five hundred years. It starts with a section of the bulky monolith showing the project in its initial state in the year 2010. The section quickly deteriorates in some areas owing to fragile materials being washed away by wind and rain, gradually succumbing to further degradation (figs P.3.101a–b). As one moves from one section-layer to the next, one



P.3.99



P.3.99 Mulberry paper texture.

jumps a hundred years each time. These drawings are bare, fluid and simple as calligraphy. Details are non-existent; only the main essential lines of the project are represented. This is a reminder of Chinese landscape painting where the artist begins by roughly and quickly drafting the essential outline, *Li*, of its theme, before adding details and poems in a later phase. For each section, thus for every 100 years, a variety of symbols and arrows show the interaction being undergone between the project and the climate, through the weathering instruments. Each symbol represents a particular type of decay by one of the climate components, such as wind, rain, humidity, etc. For instance, the spiral symbol represents the wind path in the project, which erodes the ruin's surface directly but also indirectly by activating the tendering fans that grind down the more solid components of the section. Reflecting this principle, the chart on the bottom of the drawing indicates, for example, that the floral moss, a light and powdery component, disappears faster than the sponge and can be parsimoniously re-introduced in the section by the building-grower.

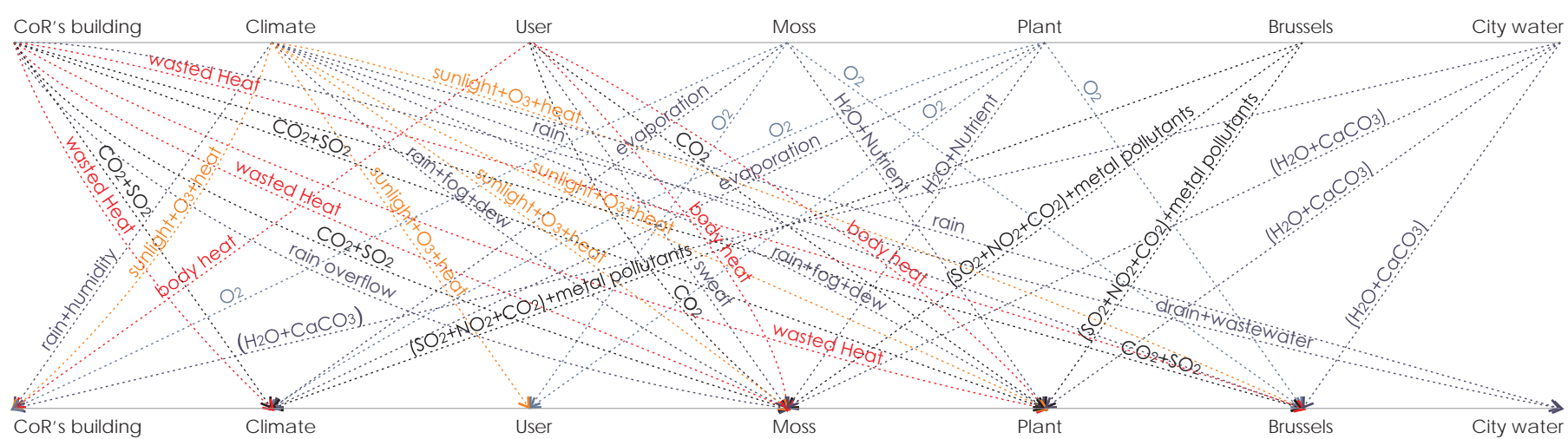
The water chart (fig P.3.102) describes the water circuit between the well filled with city water, the CoR building and the ruin throughout the four seasons of year 2500 (figs P.3.102a–b). The water flow is indicated by waving lines following the water course from top to bottom and the evaporation level within the ruin is represented by a cloud of + symbols. The drawing also represents the absorbed moisture within the ruin's material composition through colour variation in the ruin's material section. For autumn 2500, the relative humidity is expressed through isobars, which are lines that connect geographical locations having equal atmospheric pressure. The water chart explains where and when water and the evaporation and relative humidity in the air putrefy the section the most.

*Ruining a Ruin's* plans of the monoblock (fig P.3.103) and monolith (fig P.3.104) present the project at the initial stage then at year 2500. They are drawn as a complementary information on the volume and connections of the garden monoblock/lith in regards to the neighbouring EU buildings. They use the same symbols and graphics found in *Ruining a Ruin's* interaction dynamics and the process of becoming panels. The monoblock's plan shows the relation between the project and the inner courtyard of the CoR building. It suggests a possible development of the monoblock into the urban grain of the European Quarter. The monolith's plan describes the horizontal swelling or damage occurring to the project throughout the centuries. The overall silhouette of the garden monolith doesn't change drastically as building-growers take care in avoiding

materials' collapses on passers-by on the streets below. Formal and material modifications mostly happen within the garden monoblock's perimeter.

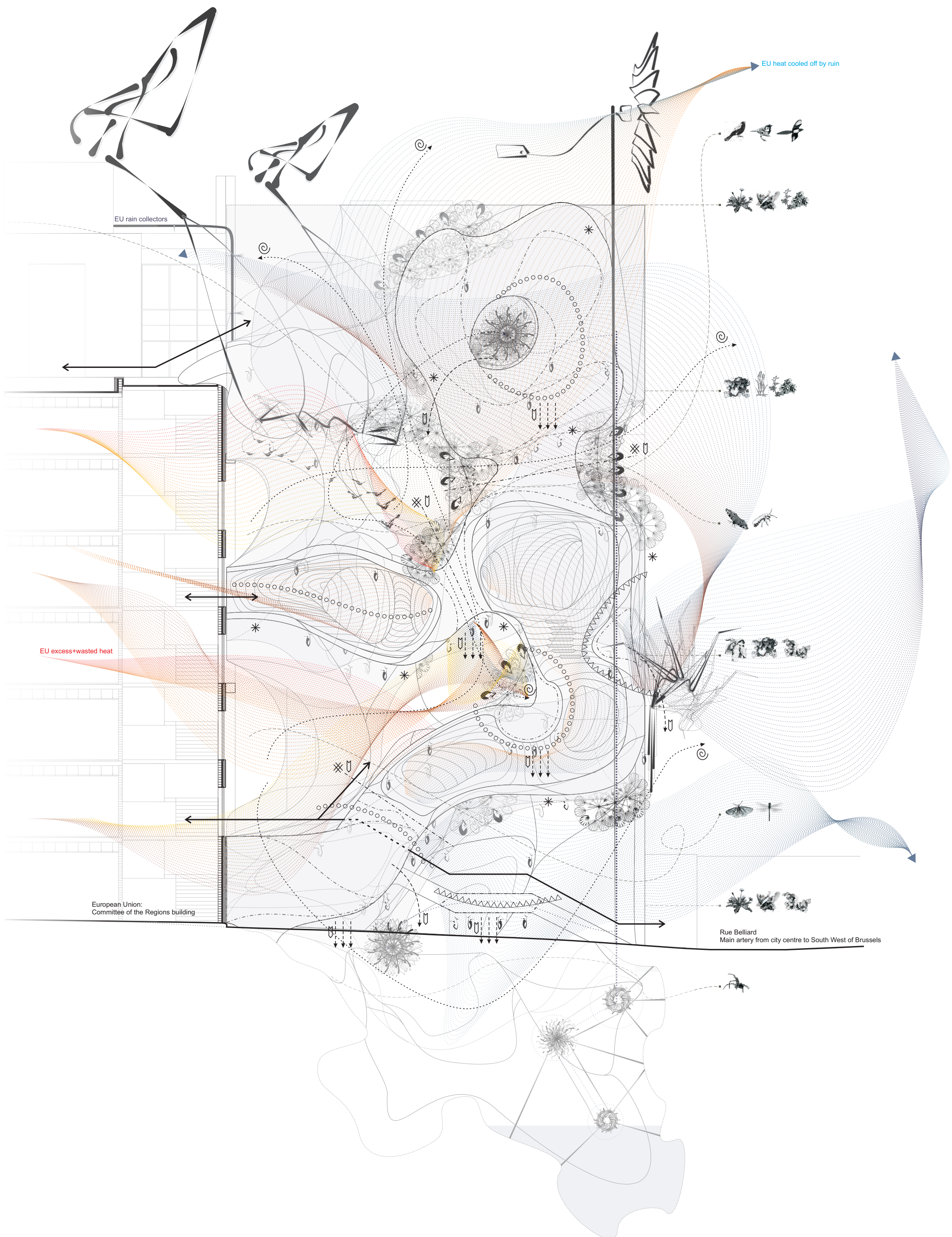
As all these drawings can be perceived as maps of the current situation in the ruin, they can be imagined to be drawn monthly by and for building-growers' usage. After reading the information, building-growers can make the necessary adjustments to the ruin to ensure its good development.



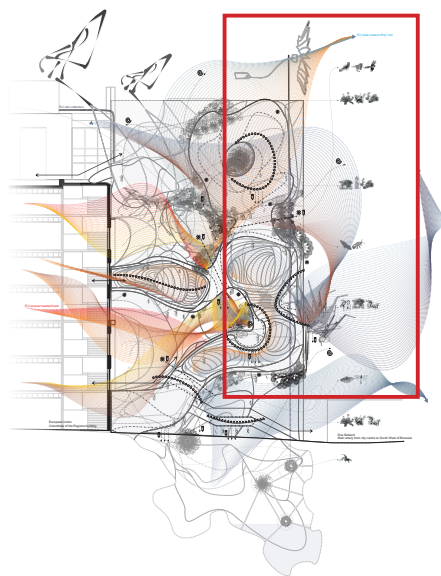


**P.3.100** *Ruining a Ruin's interaction dynamics* panel accompanied by the diagram of the biophysical and energetic exchanges between the main components of the project.









- ☉ Material weathering by wind
- ⌋ Material collapsing by gravity
- △ Material ripping and tearing by gravity and inner tension
- ✕ Abrasion and friction between materials
- ≈ Flood and putrefaction by rain and humidity
- Mutilation and damage by users
- ✱ Erosion control by plant roots
- ▮ Sedimentation and settling by accumulation
- Lithification of sediment deposits

P.3.100a *Ruining a Ruin's interaction dynamics, detail-1.*



Insects and fauna found at this height of the garden monoblock

Vegetation to be planted or found at this height of the garden monoblock

Textured area subject to faster decay, along potential rift lines

Mutilation of the monoblock owing to its interaction with users and building-growers

Wind path causing material erosion

City water pumped by the wind turbine up to the water sprinklers in the garden monoblock

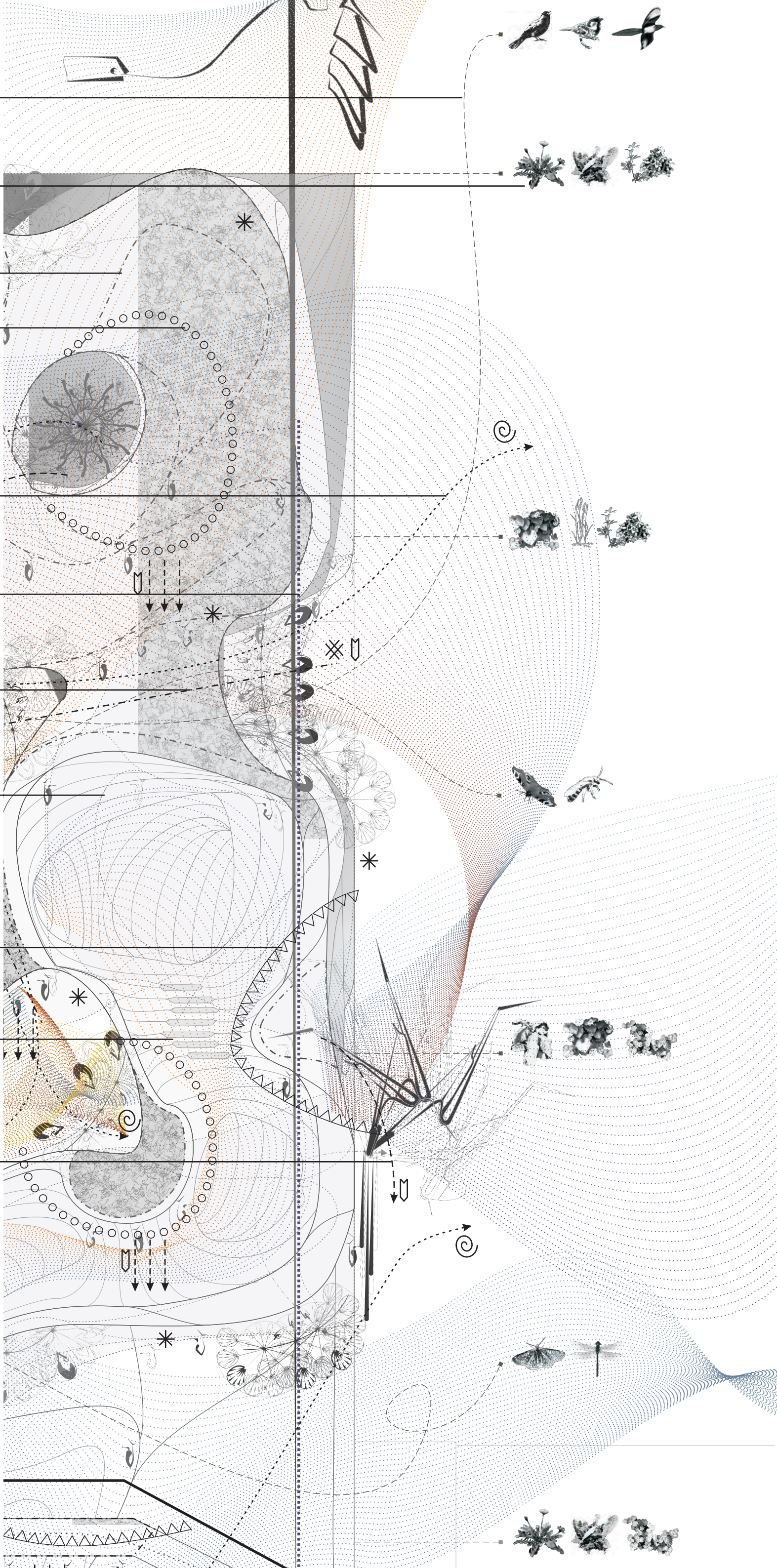
Abrasion/friction along this line as the heavy upper part of the monoblock slowly tilts under gravity

Elevation line of the monoblock, in front of the section line

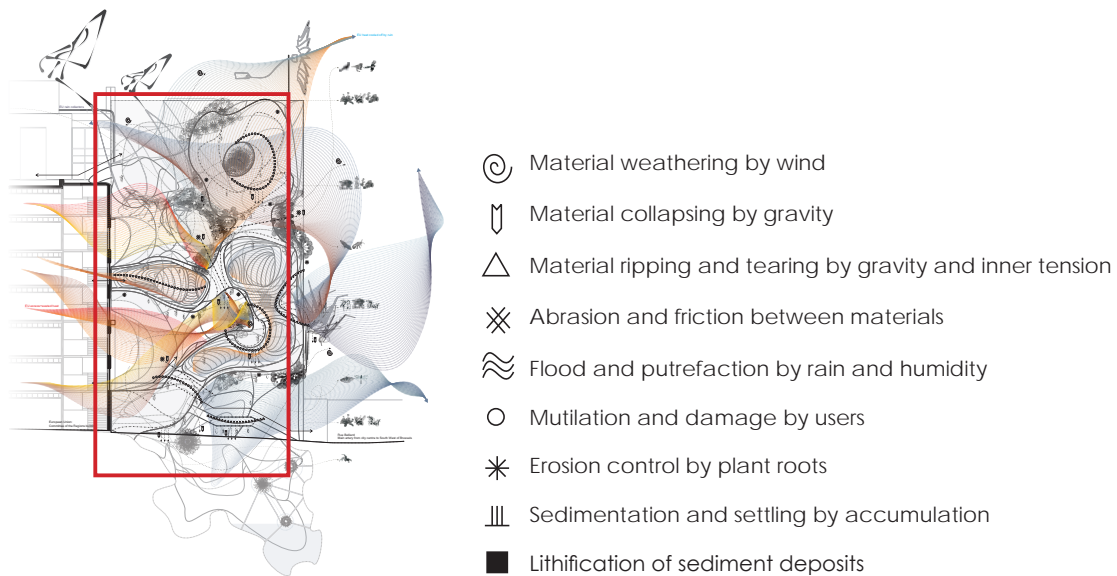
Tearing and ripping of materials owing to the action of mechanical arms

Steps carved inside the interior chamber of the garden monoblock

Falling of decaying materials owing to gravity







P.3.100b *Ruining a Ruin's interaction dynamics, detail-2.*



Collected rain sprinklers

Access to the monoblock  
from the CoR's building

Wind path causing  
material erosion

Light texture indicating  
the section of the  
garden monoblock

Mutilation of the  
monoblock owing to its  
interaction with its users and  
building-growers

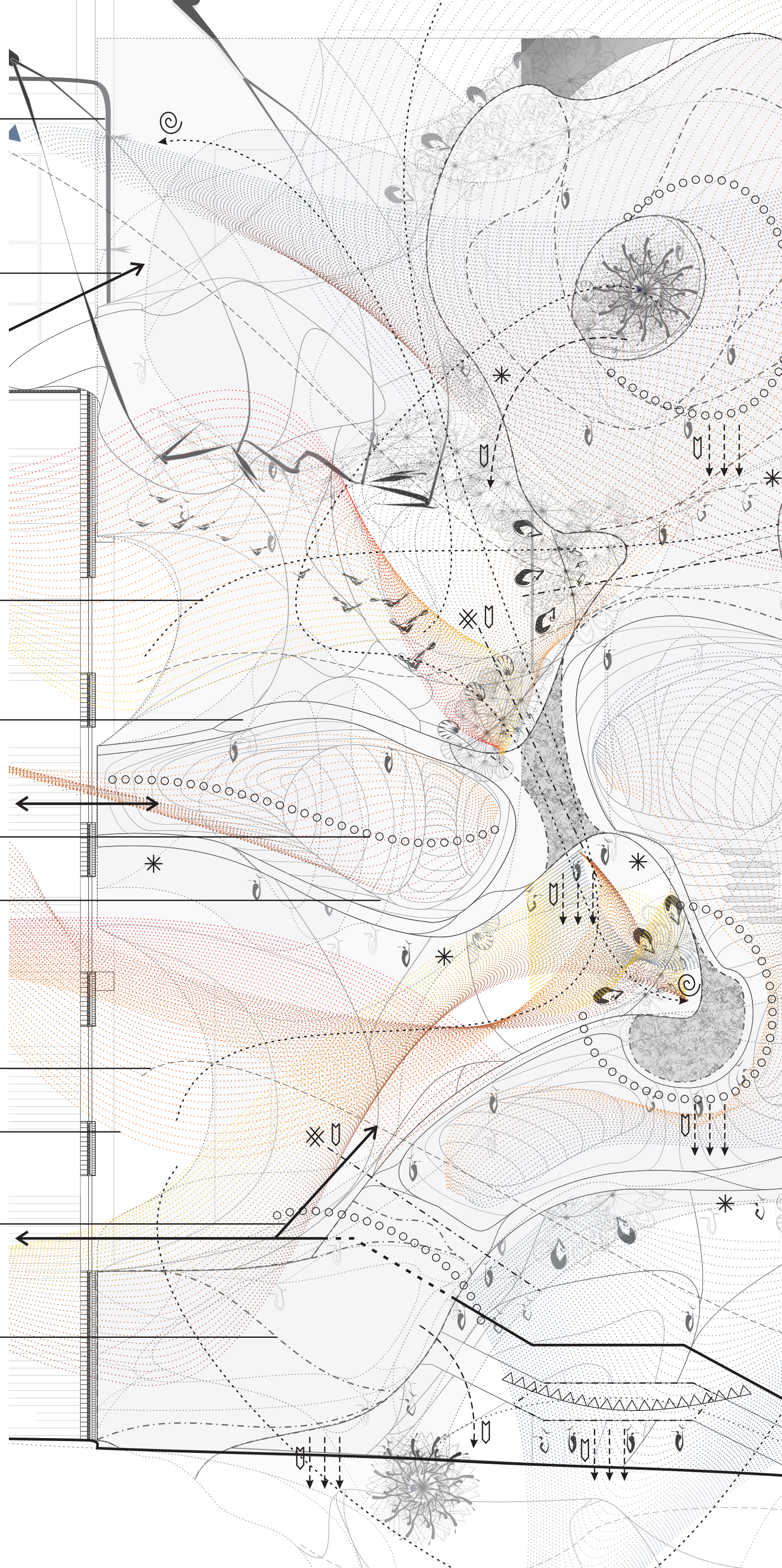
Interior topography of the  
garden monoblock

Insects and fauna found  
at this height of the  
garden monoblock

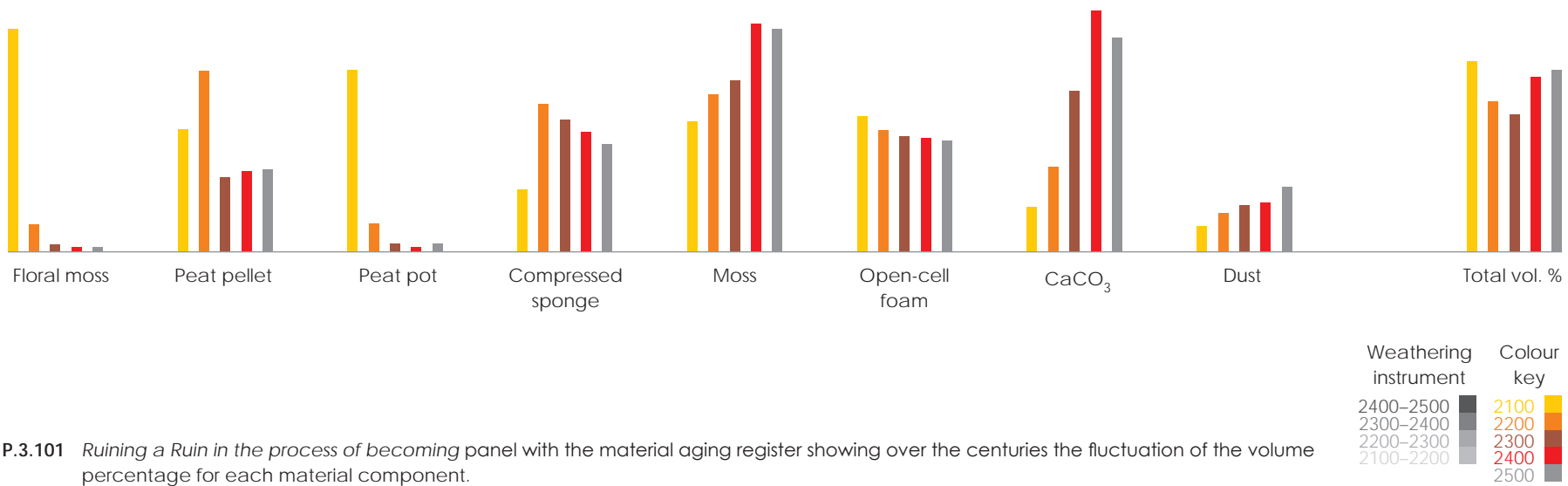
CoR's wasted heat  
radiating towards the  
garden monoblock

Access from the street  
to the CoR's building/  
courtyard and the  
monoblock's upper levels

Dark texture indicating area  
subject to faster decay,  
following potential rift line

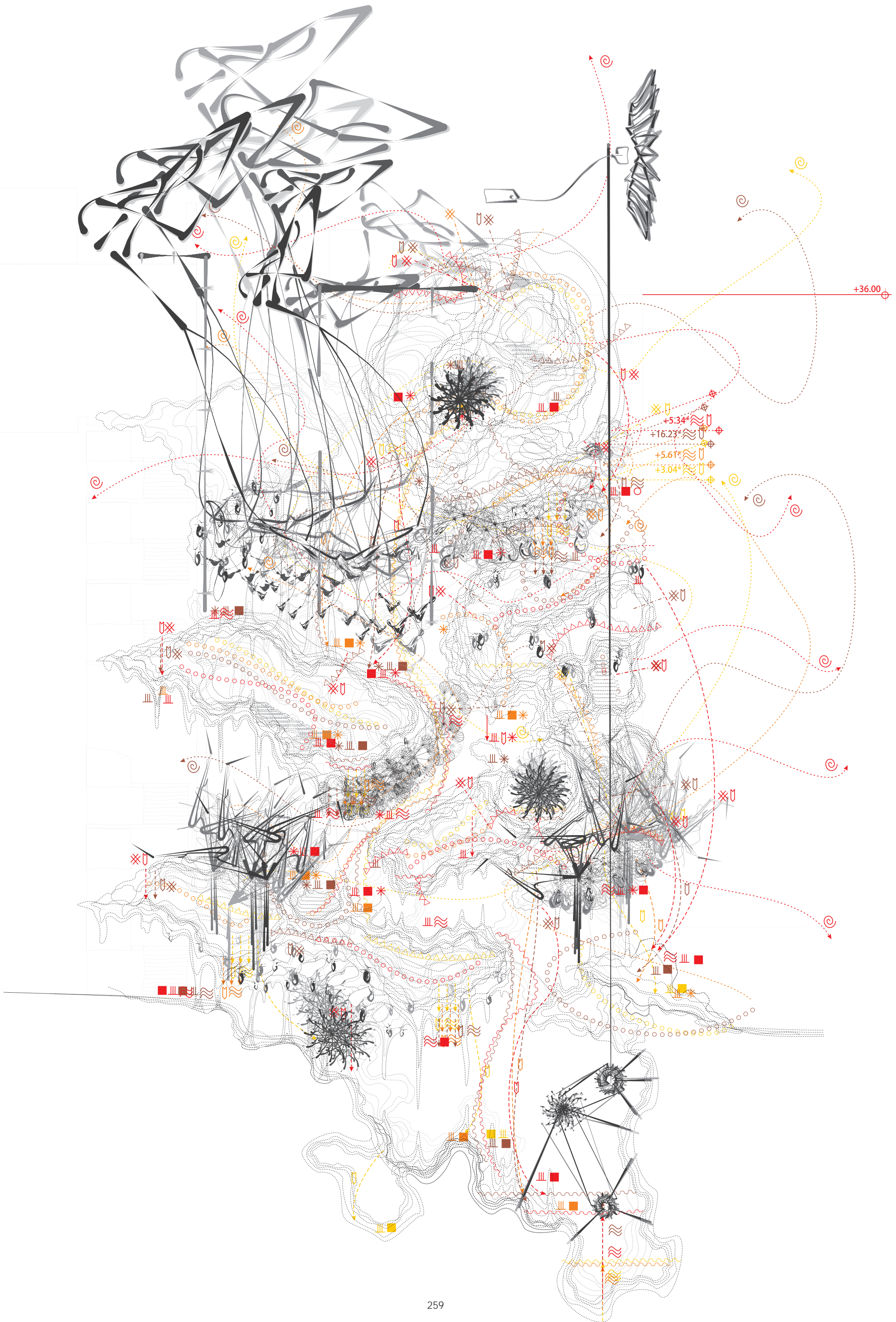


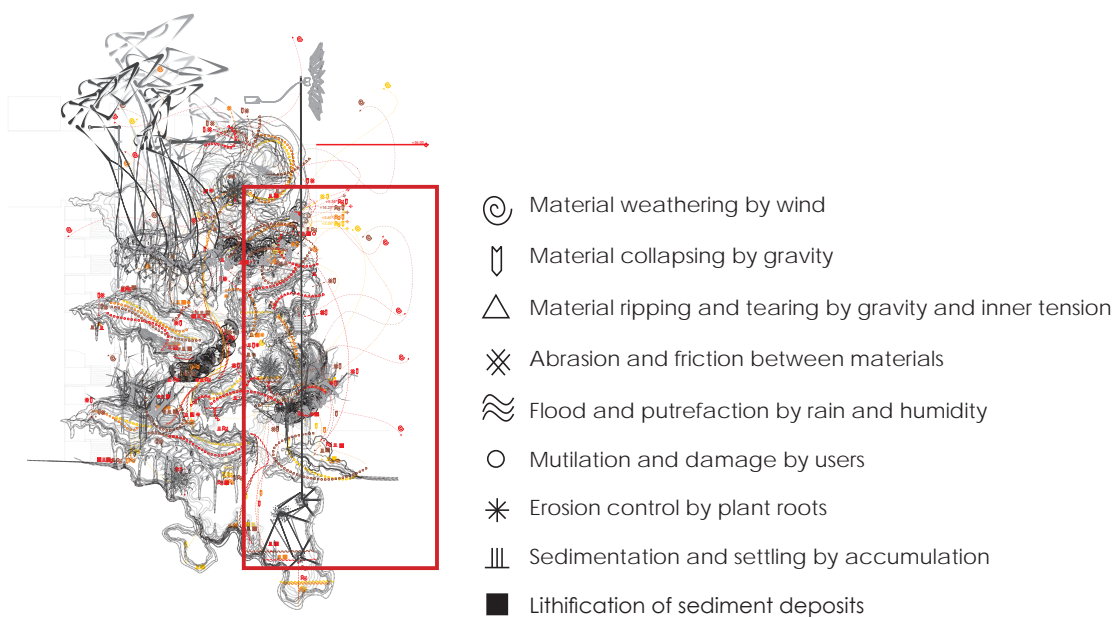




**P.3.101** Ruining a Ruin in the process of becoming panel with the material aging register showing over the centuries the fluctuation of the volume percentage for each material component.







P.3.101a *Ruining a Ruin in the process of becoming, detail-1.*



Rotation angle of the  
tilting top of the garden  
monolith in year 2200

Rain calabashes of  
various sizes following  
their water content

Garden monolith's  
section line evolving  
through the centuries

Displacement of the water  
sprinklers over the centuries  
by building-growers in order  
to maintain the right level of  
humidity inside the monolith

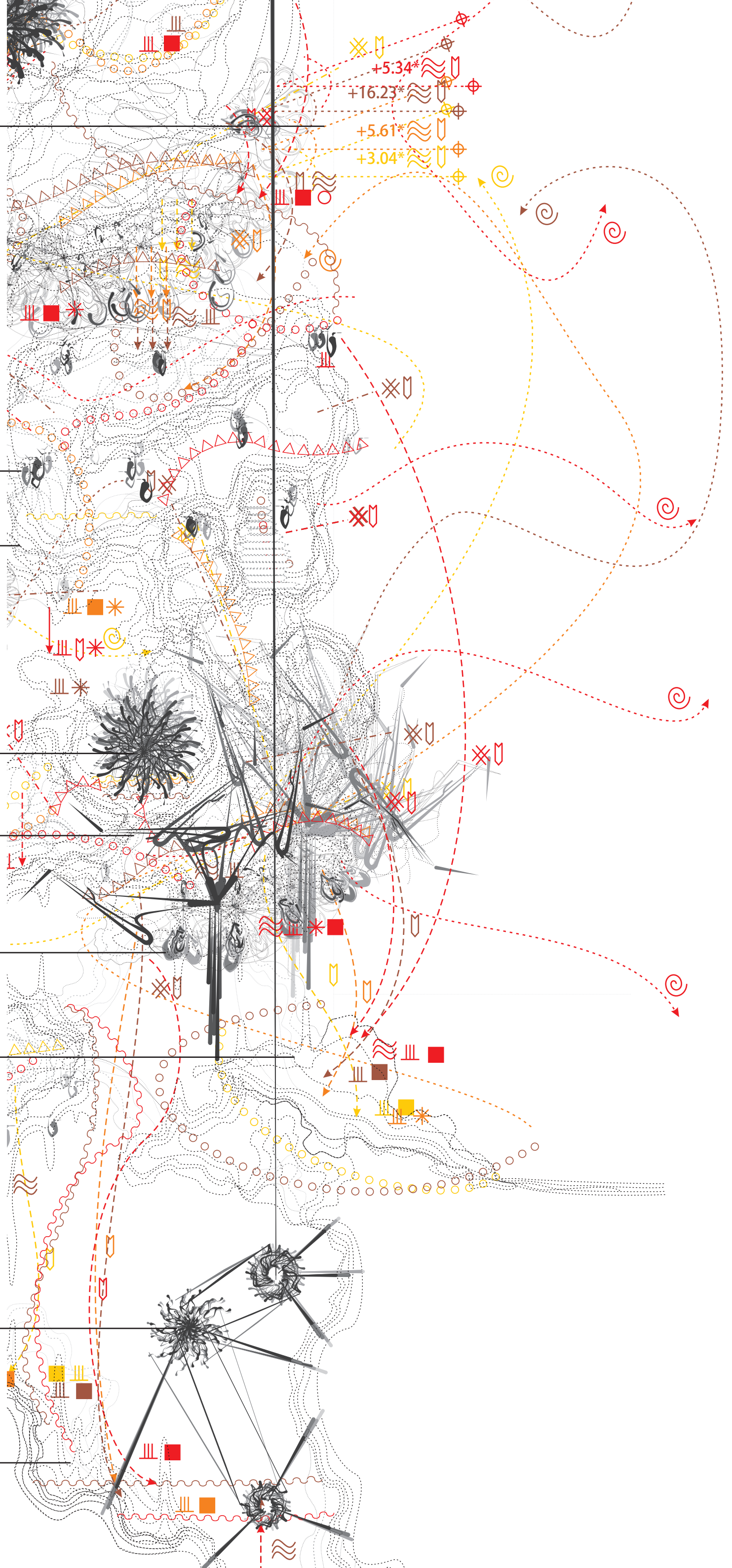
Displacement of  
articulated arms over the  
centuries to control the  
garden monolith's erosion

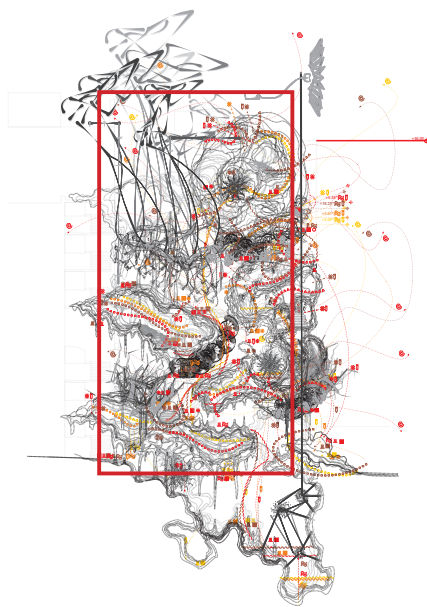
Tending fans to be  
replaced or left to  
petrify according to the  
structural necessity in the  
garden monolith

Rising of the ground level  
owing to the accumulation,  
sedimentation and  
lithification of fallen materials

Water wheels, activated  
by the wind turbine,  
pump the city water to  
the water sprinklers in the  
garden monolith

Speleological formation in  
the underground part of  
the garden monolith





- ☉ Material weathering by wind
- ⌋ Material collapsing by gravity
- △ Material ripping and tearing by gravity and inner tension
- ✕ Abrasion and friction between materials
- ≈ Flood and putrefaction by rain and humidity
- Mutilation and damage by users
- ✱ Erosion control by plant roots
- ≡ Sedimentation and settling by accumulation
- Lithification of sediment deposits

P.3.101b *Ruining a Ruin in the process of becoming, detail-2.*



Giant kites onto which the flying bridge is suspended

Garden monolith's elevation line evolving though the centuries

Flying bridge offering access to remote chambers of the garden monolith

Water condensers affecting the un/folding of the flying bridge

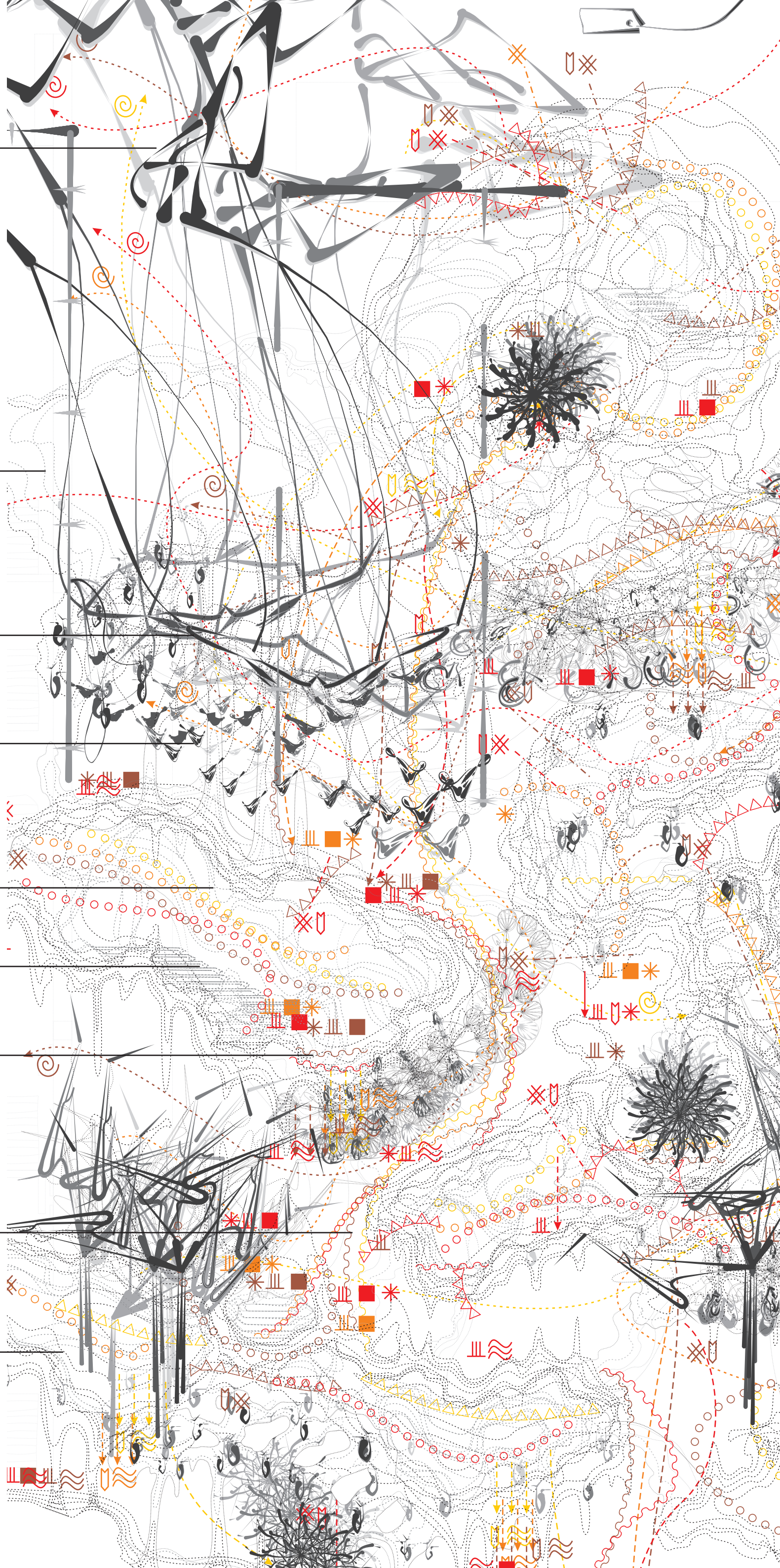
Evolution of the chamber's inner topography

Addition of stairs in order to access further chambers

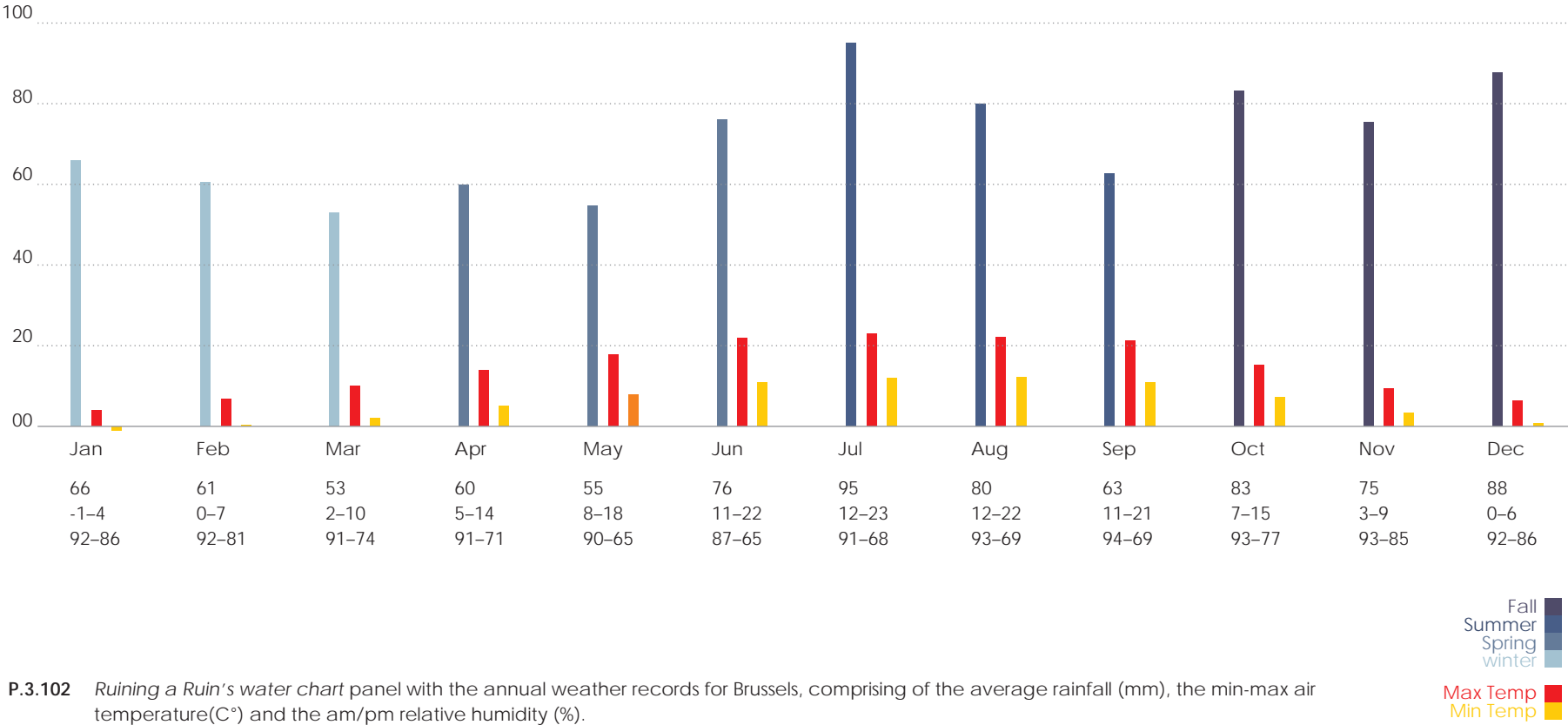
Water level in the chamber when flooded during heavy rain

Modification of the water path in the garden monolith throughout the centuries

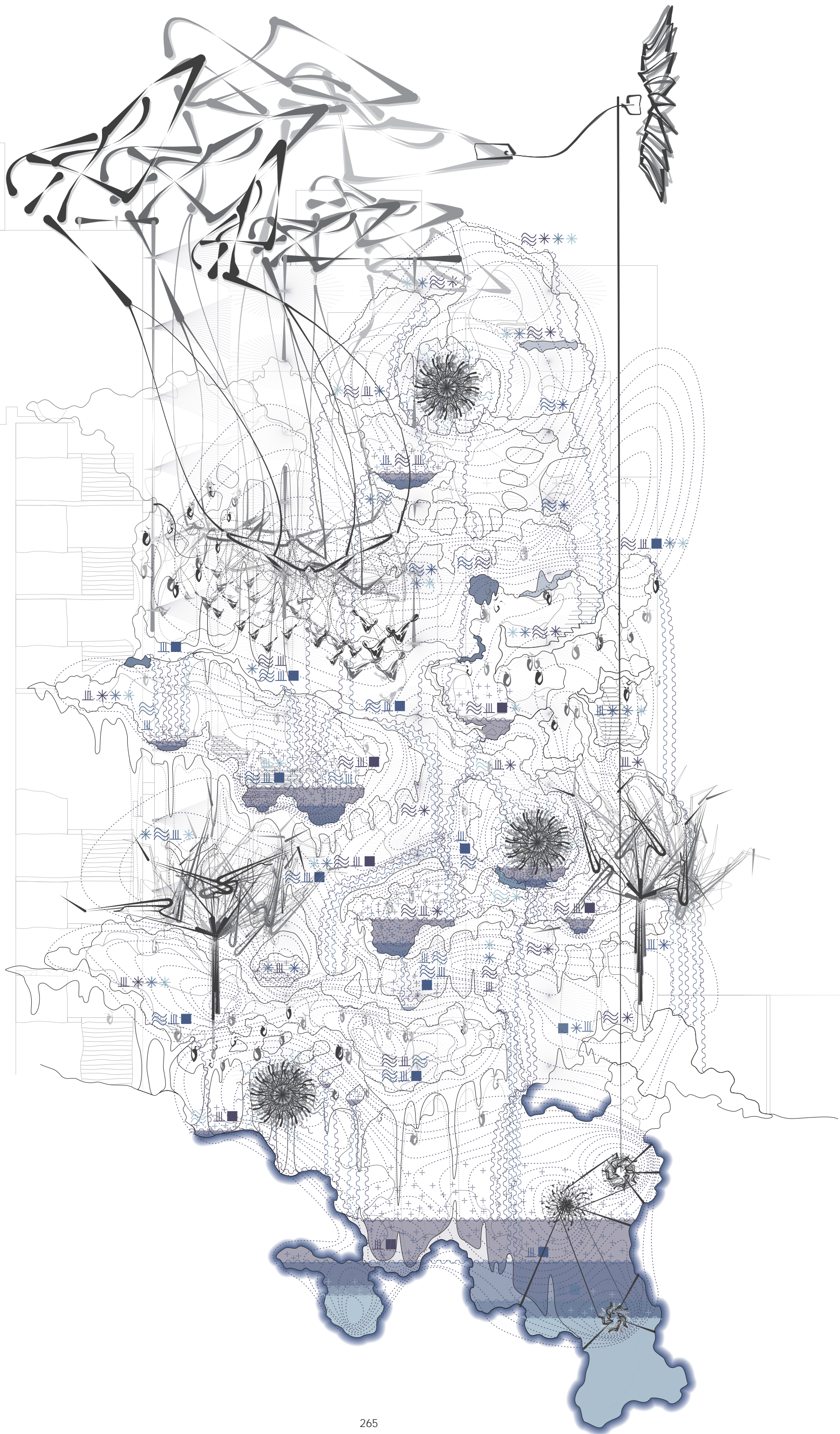
Garden monolith's section line evolving though the centuries



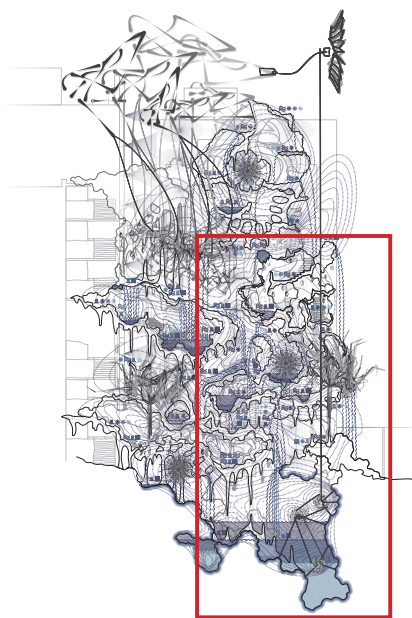




**P.3.102** *Ruining a Ruin's water chart* panel with the annual weather records for Brussels, comprising of the average rainfall (mm), the min-max air temperature(C°) and the am/pm relative humidity (%).







- ☉ Material weathering by wind
- ⌋ Material collapsing by gravity
- △ Material ripping and tearing by gravity and inner tension
- ✕ Abrasion and friction between materials
- ≈ Flood and putrefaction by rain and humidity
- Mutilation and damage by users
- ✱ Erosion control by plant roots
- ≡ Sedimentation and settling by accumulation
- Lithification of sediment deposits

P.3.102a Ruining a Ruin's water chart, detail-1.

Isobar of relative humidity during fall season

Rain collected from the CoR's building's rooftop sprinkled on to the garden monolith

Access to remote areas of the garden monolith prevented by flooding during heavy rain in fall and summer

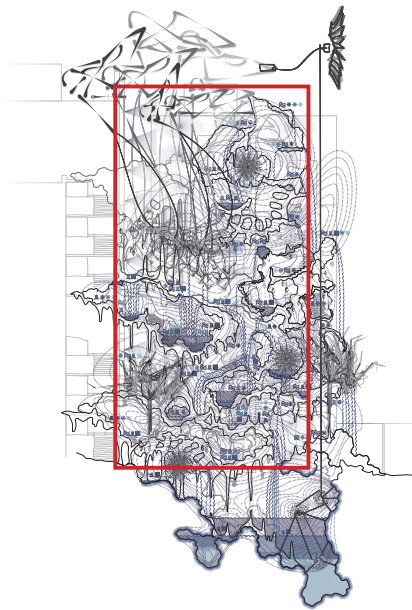
Rotation speed of the water wheel slowed down by the accumulation of water in the bottom of the chamber

Moisture absorbed by the ground around the water wheels

Adjustment of the water wheels' position according to the fluctuation of the city water level

Water chamber enclosed over time by the sedimentation and lithification of fallen materials





- ☉ Material weathering by wind
- ⌋ Material collapsing by gravity
- △ Material ripping and tearing by gravity and inner tension
- ✕ Abrasion and friction between materials
- ≈ Flood and putrefaction by rain and humidity
- Mutilation and damage by users
- ✱ Erosion control by plant roots
- ≡ Sedimentation and settling by accumulation
- Lithification of sediment deposits

P.3.102b Ruining a Ruin's water chart, detail-2.

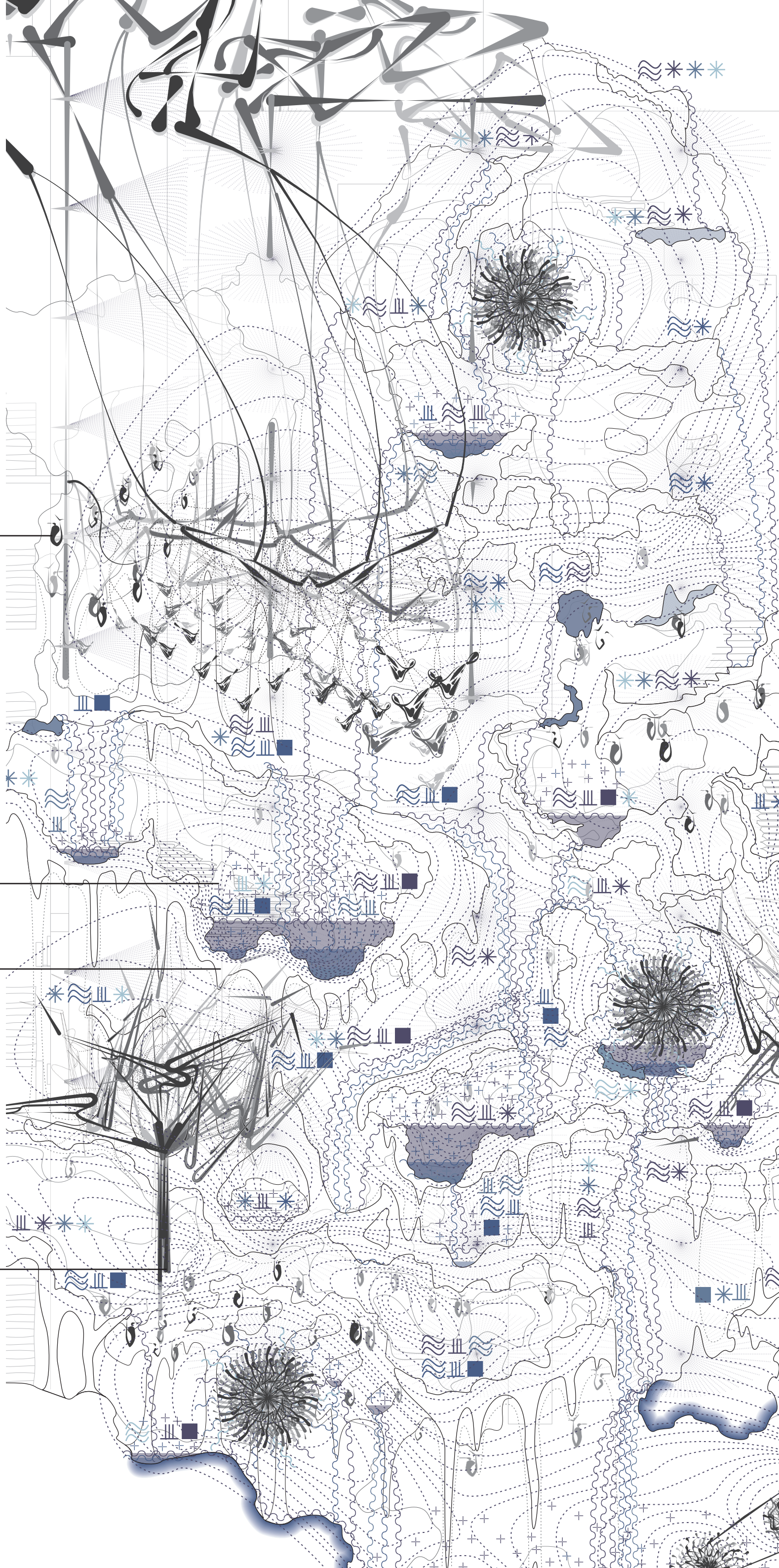


Rain calabashes regularly emptied and displaced by building-growers in order to accelerate or decelerate the decaying process of the garden monolith

High level of evaporation in chambers close to the CoR's building due to the radiation of its wasted heat

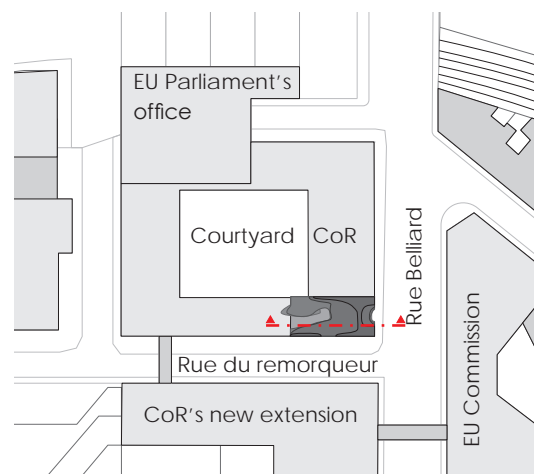
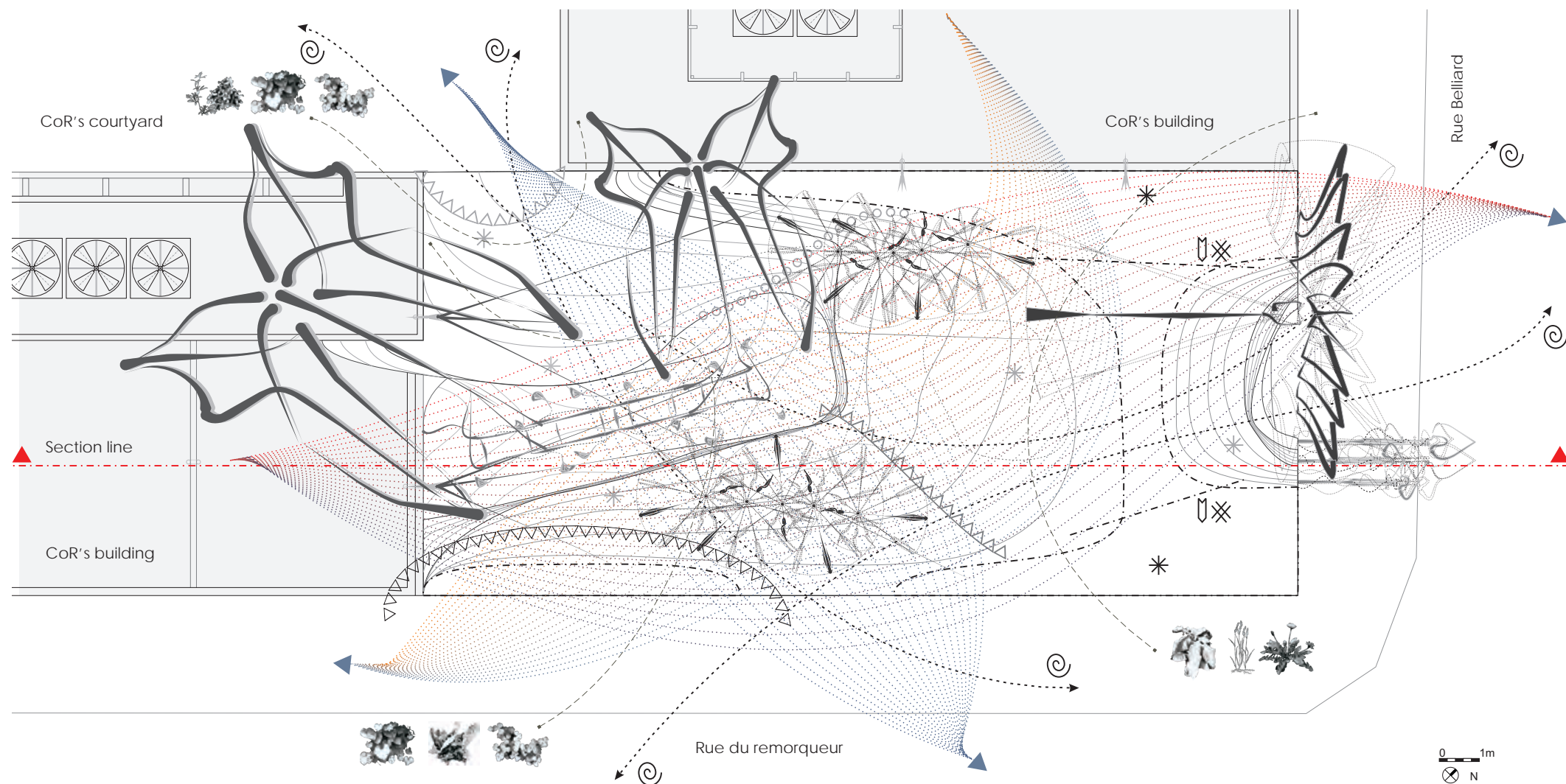
Colour gradient indicating the moisture level within the garden monolith's section

Sponge ball altering the articulated arms' position according to the absorbed amount of water and humidity



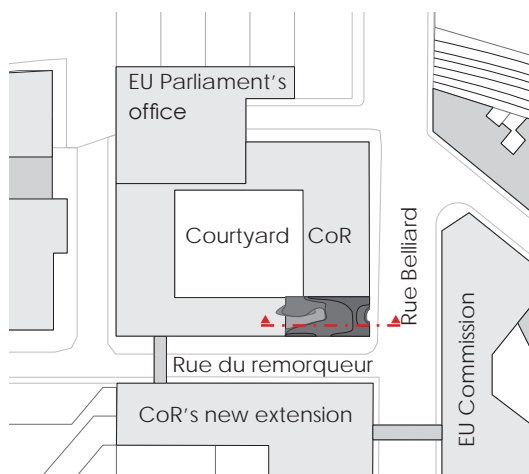
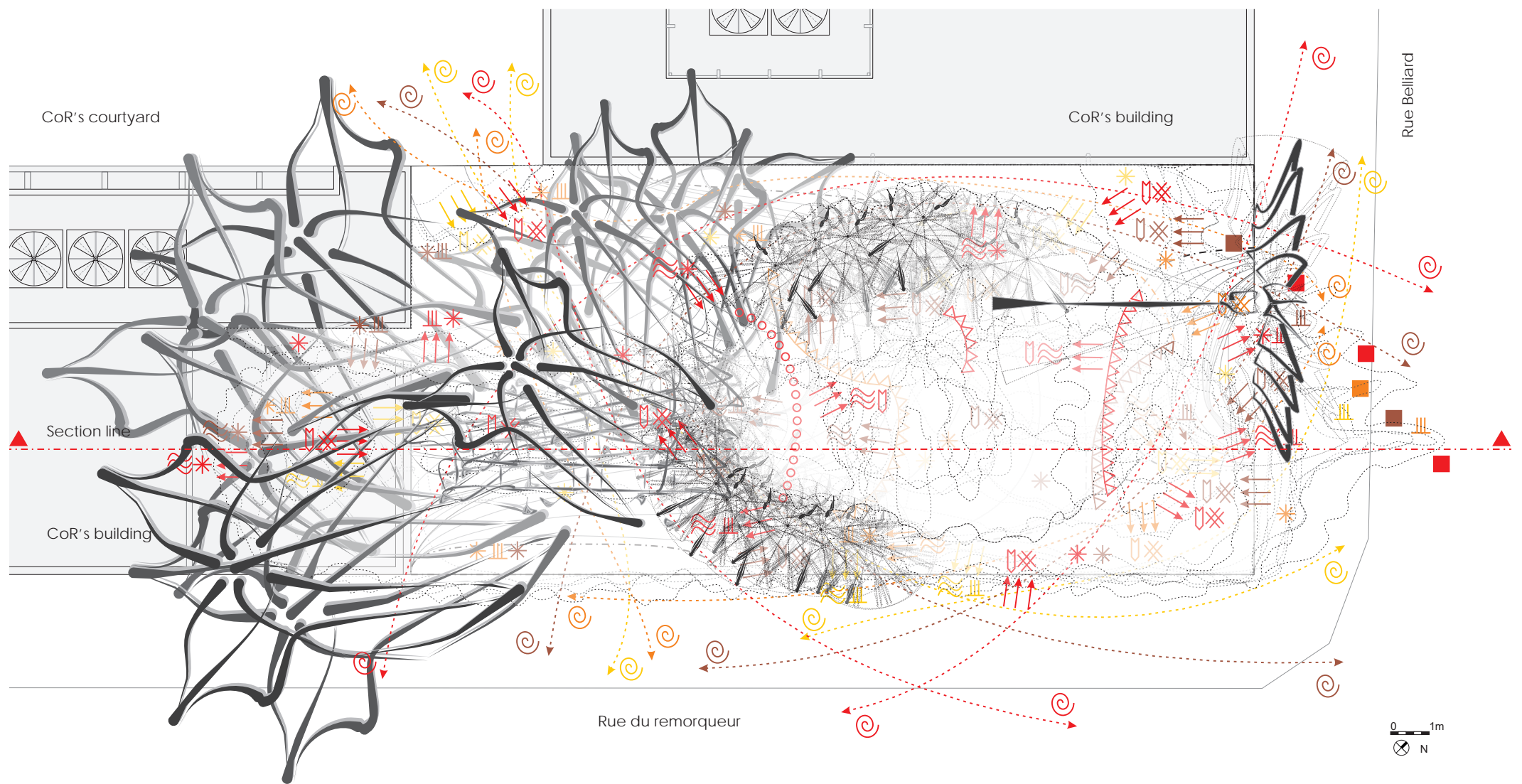


P.3.103



P.3.103 Roof plan of the monoblock to be viewed along the *Ruining a Ruin's* interaction dynamics panel.

P.3.104



P.3.104 Roof plan of the garden monolith to be viewed with the *Ruining a Ruin in the process of becoming* panel.

### 6.3.2 Evocative drawings

The second set of drawings devises a way of looking 'further'<sup>14</sup> by representing the project at different moments in time, scale and condition. They describe the project as a traditional Chinese landscape painting, unveiling parts of nature, setting an atmosphere and filling the viewer with emotions. To emphasize that evocative potential, lines and drawing components are purposely rendered both precise and blurry in order to keep the drawings' fleeting status in-between imaginary and reality.

At first glance, these drawings look like a plain repetition of the initial drawing with a focus on a particular point of the former. But as the viewer approaches closer, more details are revealed and modifications appear in the formation of stalactite or stalagmite or in the composition of the vegetation.

Here, one travels not only in time but also through space. As one moves from one drawing to the next, scale evolves by a factor 5, while focusing on a particular fragment of the project. As for time, it slows from years to months, to days then hours. As a result, one passes from scale 1:100 to 1:20 a hundred months later, then from 1:20 to 1:4 a hundred days later and, at last, from 1:4 to ~1:1 a hundred hours later, bringing the time frame to the life span of a butterfly.<sup>15</sup> In short, one focuses more and more slowly, on a more and more precise portion of the project. This jump of scale and time is a manner of transporting the viewer deeper into my project as the Chinese landscape painting would do, by adding blank spaces between the front and background as a way to draw and immerse the viewer within the painting.

The first evocative drawing is made at scale 1:100; it is winter in year 2500 and one sees the quiet overall view of the section where the garden monolith grew into a ruin. The weathering instruments are drawn into a calligraphic style borrowed from scientific drawings for a visual continuity between the scientific and evocative drawings (figs P.3.105, a–c).

At scale 1:20, it is a hundred months or the equivalent of eight years and a season later – spring 2509. The attention of the viewer is oriented towards a particular portion of the first drawing. In here, one observes the ruin's spatial arrangements that recall the punctured morphology of a *Taihu* rock or the geomorphology of a subterranean grotto. The weathering tools are more refined but keep the previous calligraphic style to maintain the overall 'blurriness'. One also hears the birds' flapping wings and the shy murmur of falling water, making the

experience of *Ruining a Ruin* a vivid sensation in the mind of the viewer (figs P.3.106, a–c).

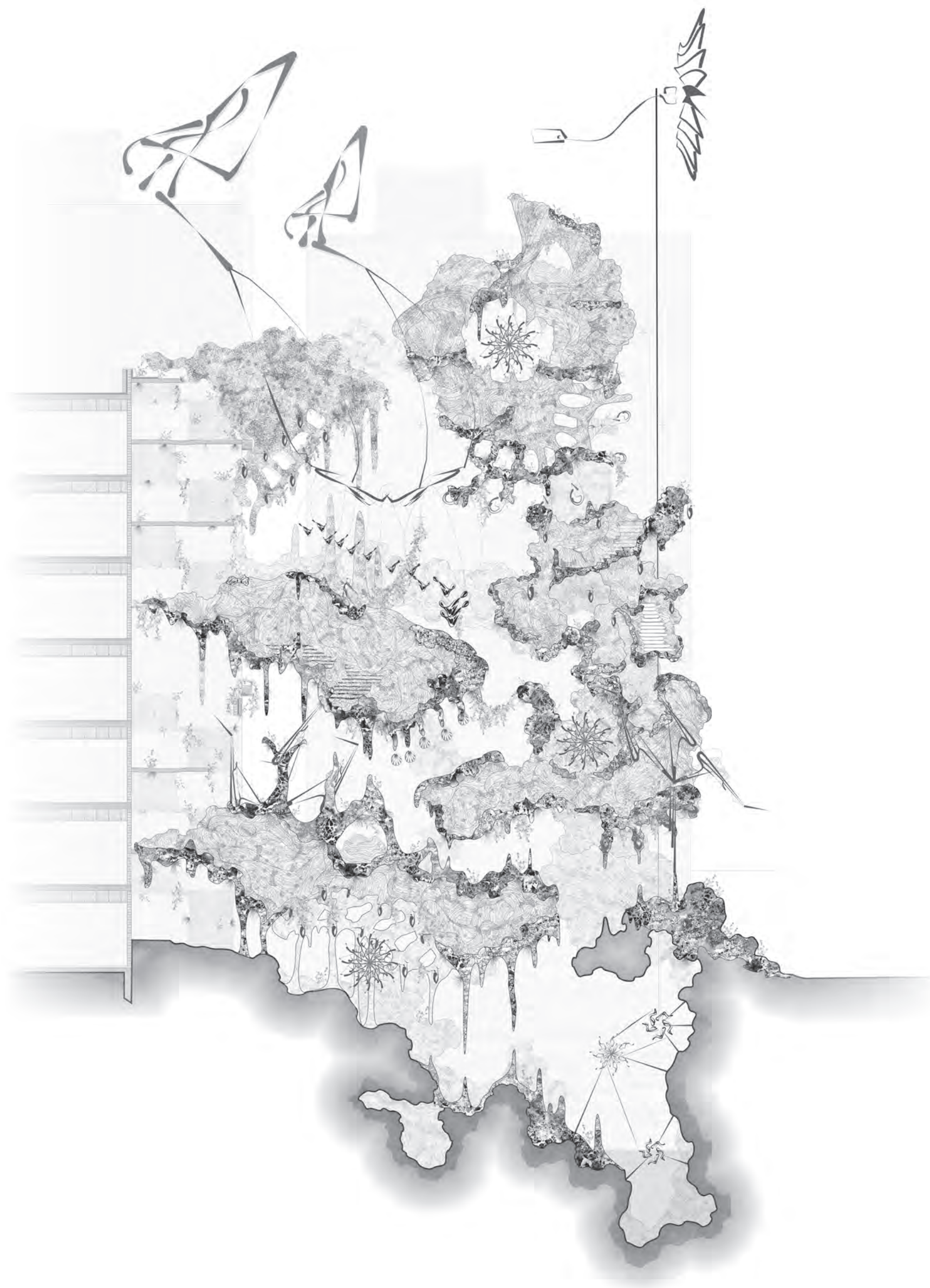
A hundred days or about a season later – summer 2509, at scale 1:4 – the section shows how the spongy materials are lithified into stones and how moss and plants are distributed in a given part of the ruin. This drawing offers a sense of tactile texture of the evolving ruin (figs P.3.107, a–c).

A hundred hours or four days and four hours later – July, at scale 1:1 – it is the wettest month of the year as seen on the bottom diagram of the water chart (fig P.3.103). Different species of mosses and plants as well as insects can be distinguished in this drawing (figs P.3.108, a–c). The lithification of the project's spongy materials can be observed in details. The drawing presents a bucolic scene where one virtually smells the wet soil and the scent of flowers while brushing those mosses with the fingertip.





**P.3.105** *Ruining a Ruin's section 1:100, year 2500.*





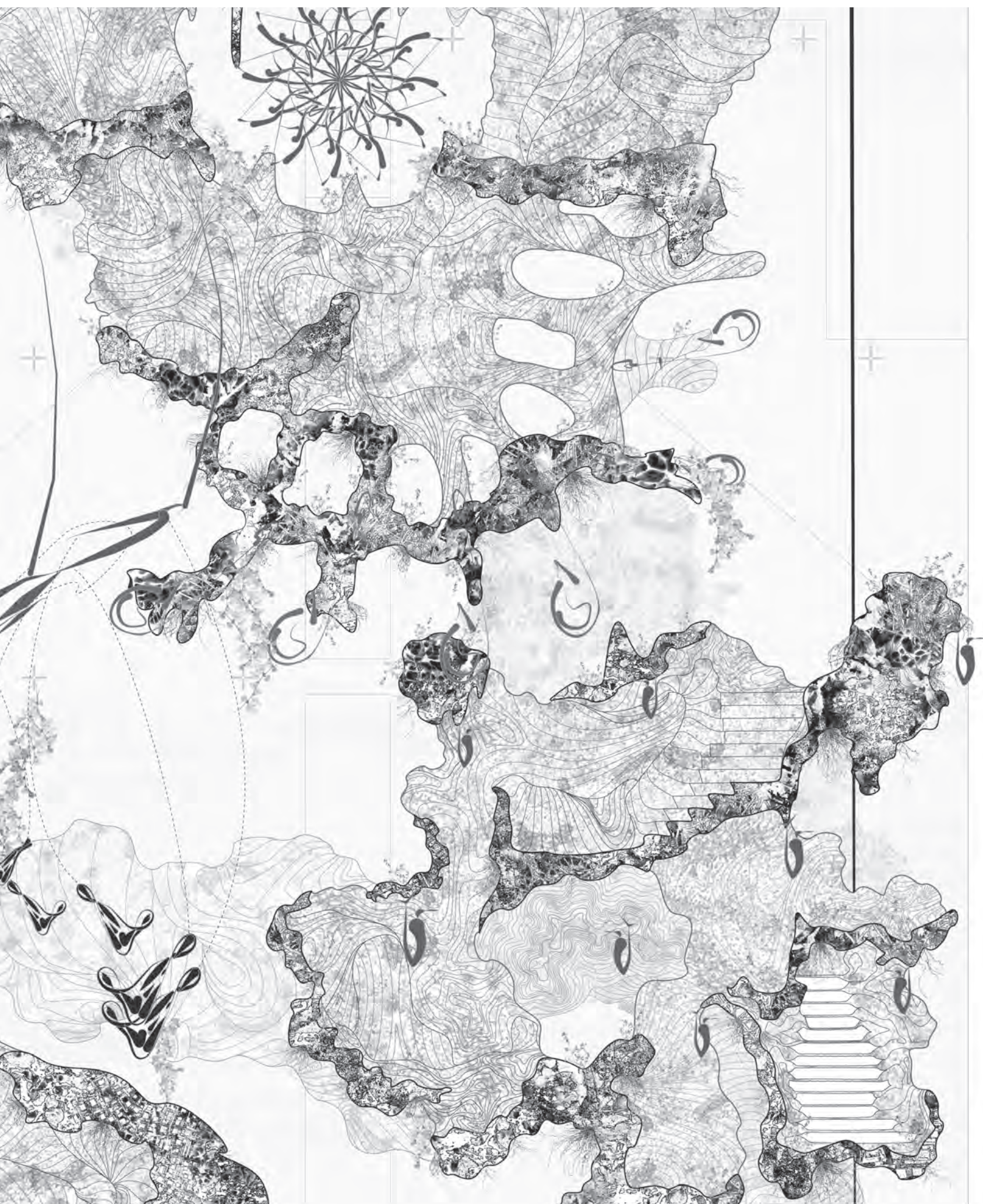


P.3.105a

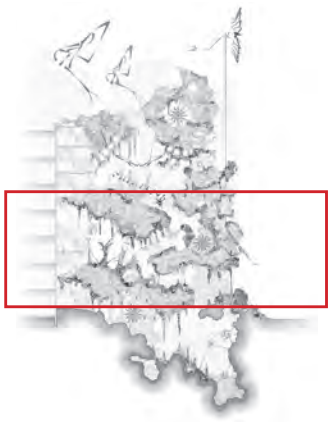


P.3.105a Ruining a Ruin's section 1:100, detail-1.

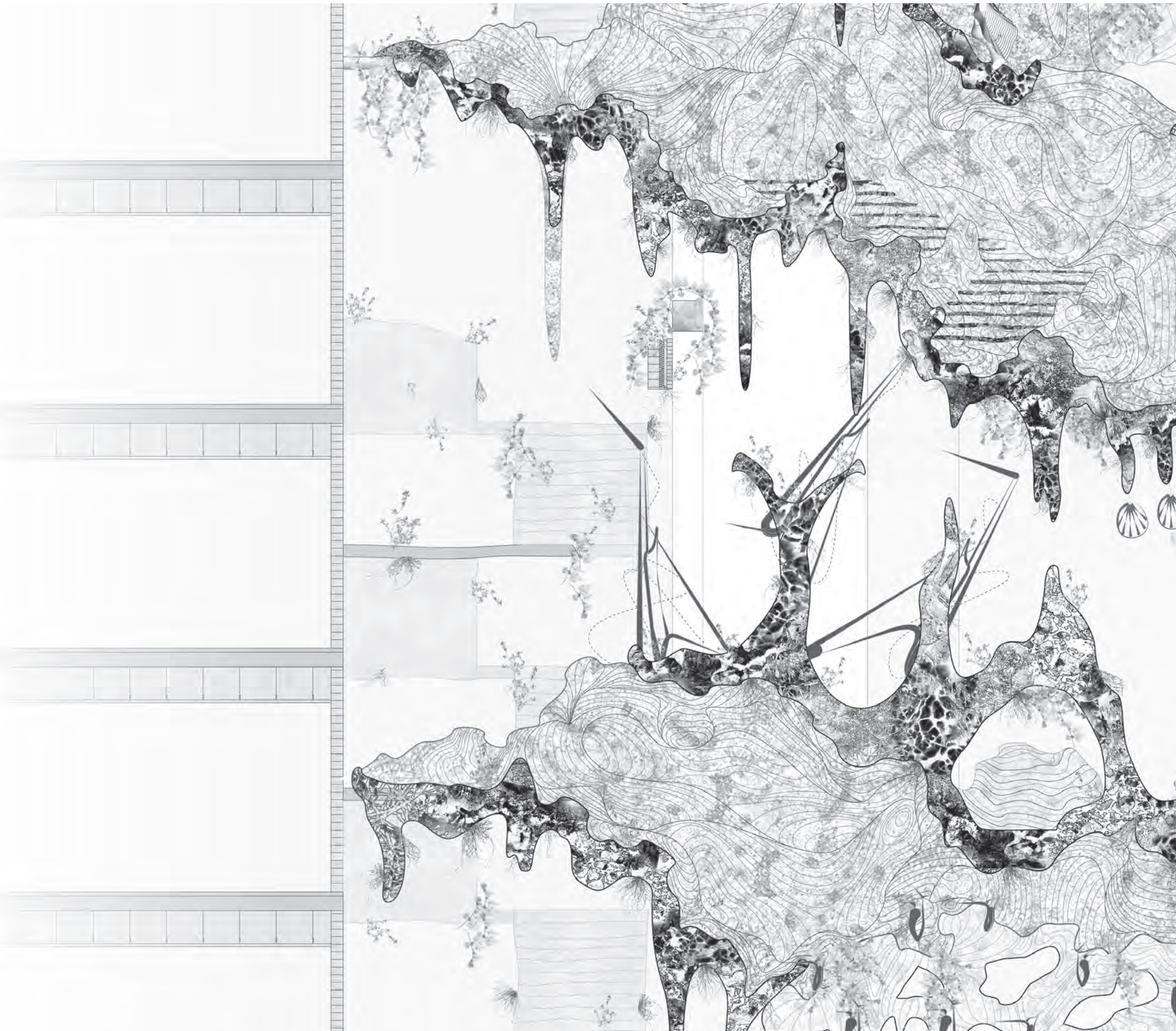






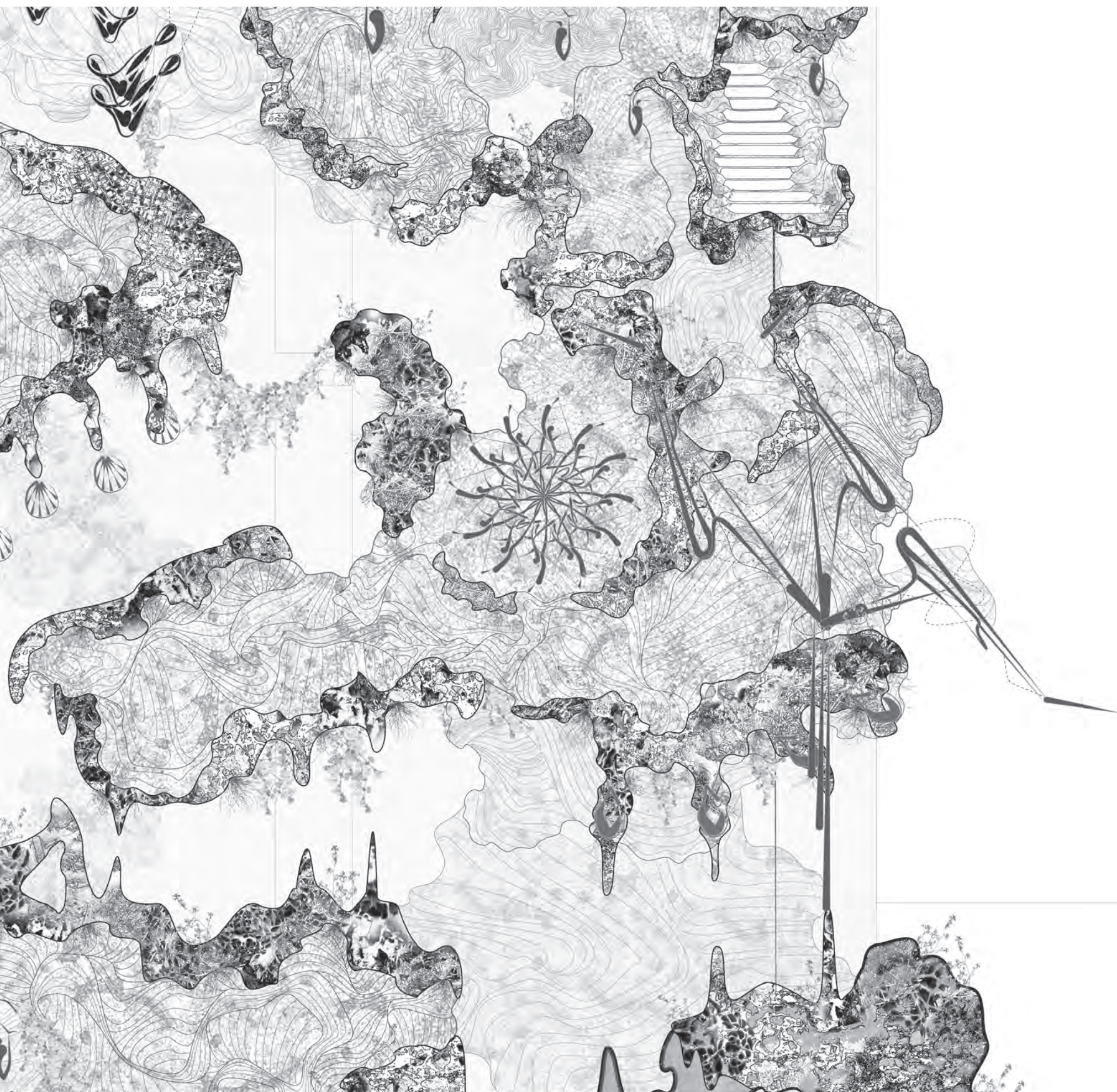


P.3.105b

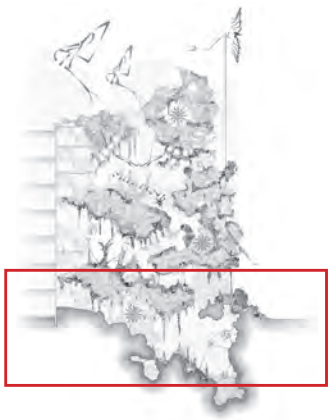


P.3.105b *Ruining a Ruin's section 1:100, detail-2.*









P.3.105c



P.3.105c *Ruining a Ruin's* section 1:100, detail-3.

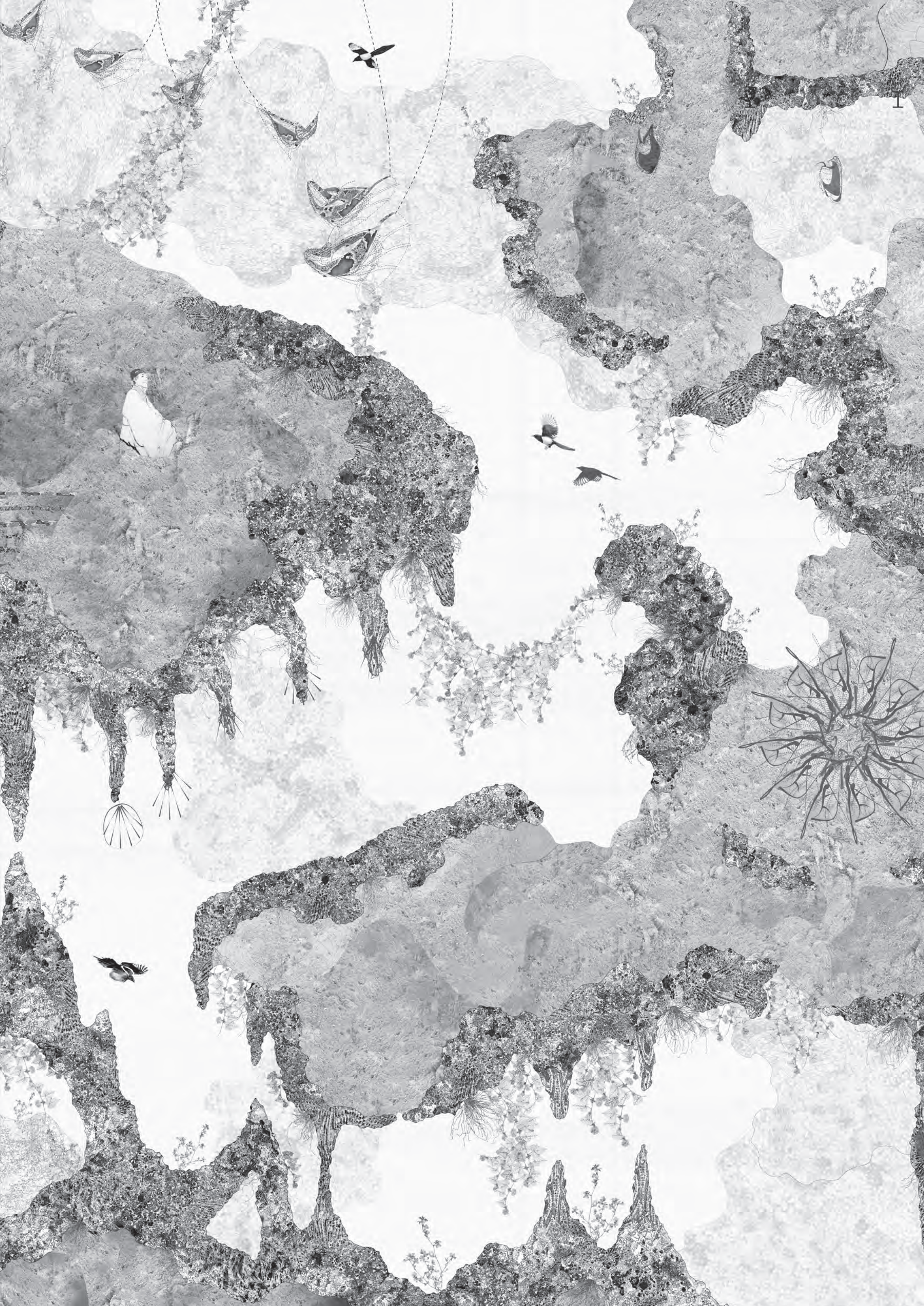




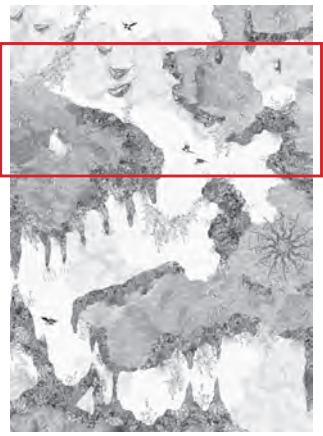


**P.3.106** *Ruining a Ruin's section 1:20, zoom into the previous section, in a time period of 100 months after the first drawing.*

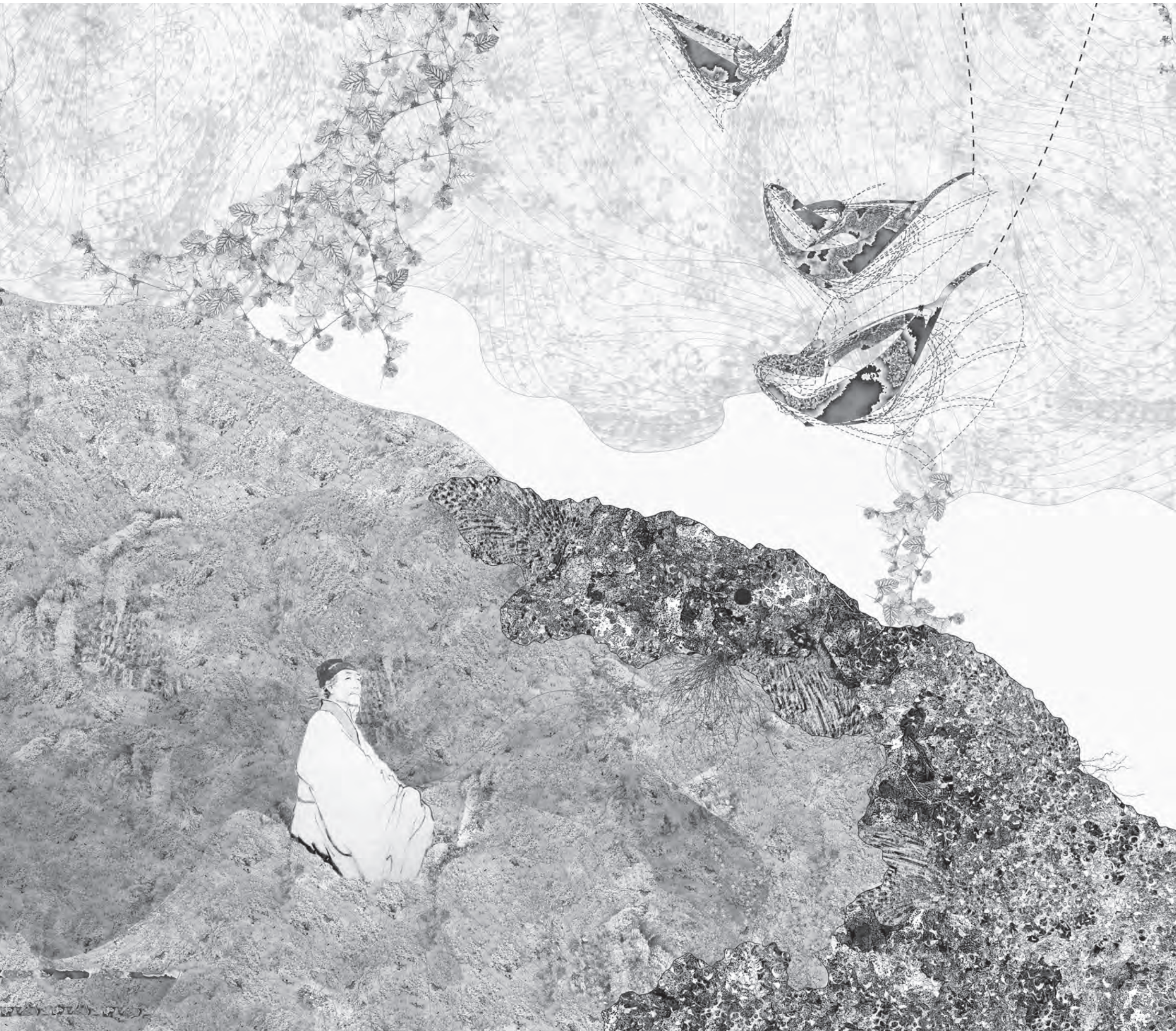






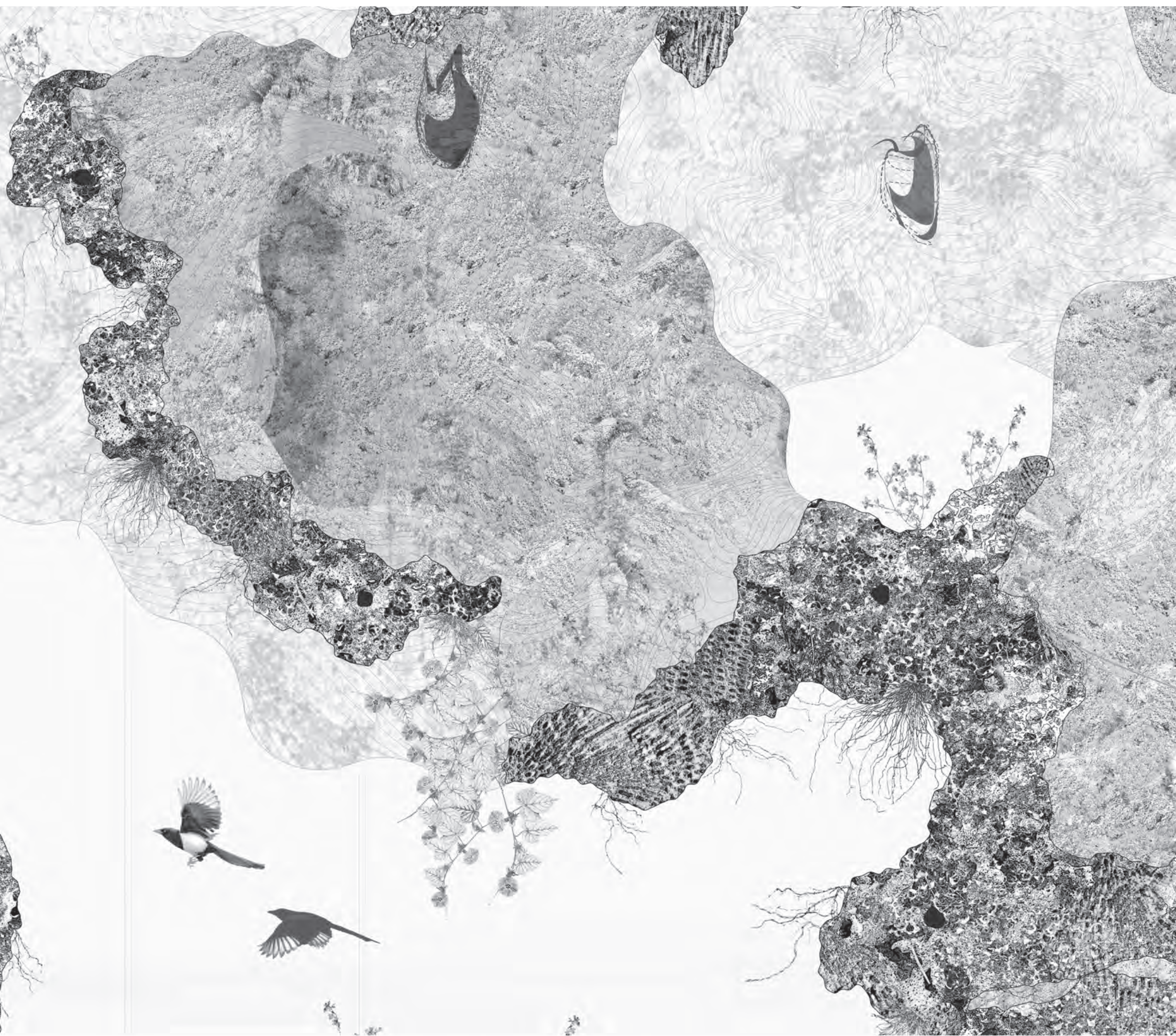


P.3.106a

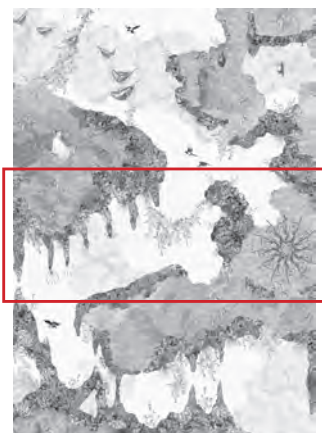


P.3.106a *Ruining a Ruin's* section 1:20, detail-1.







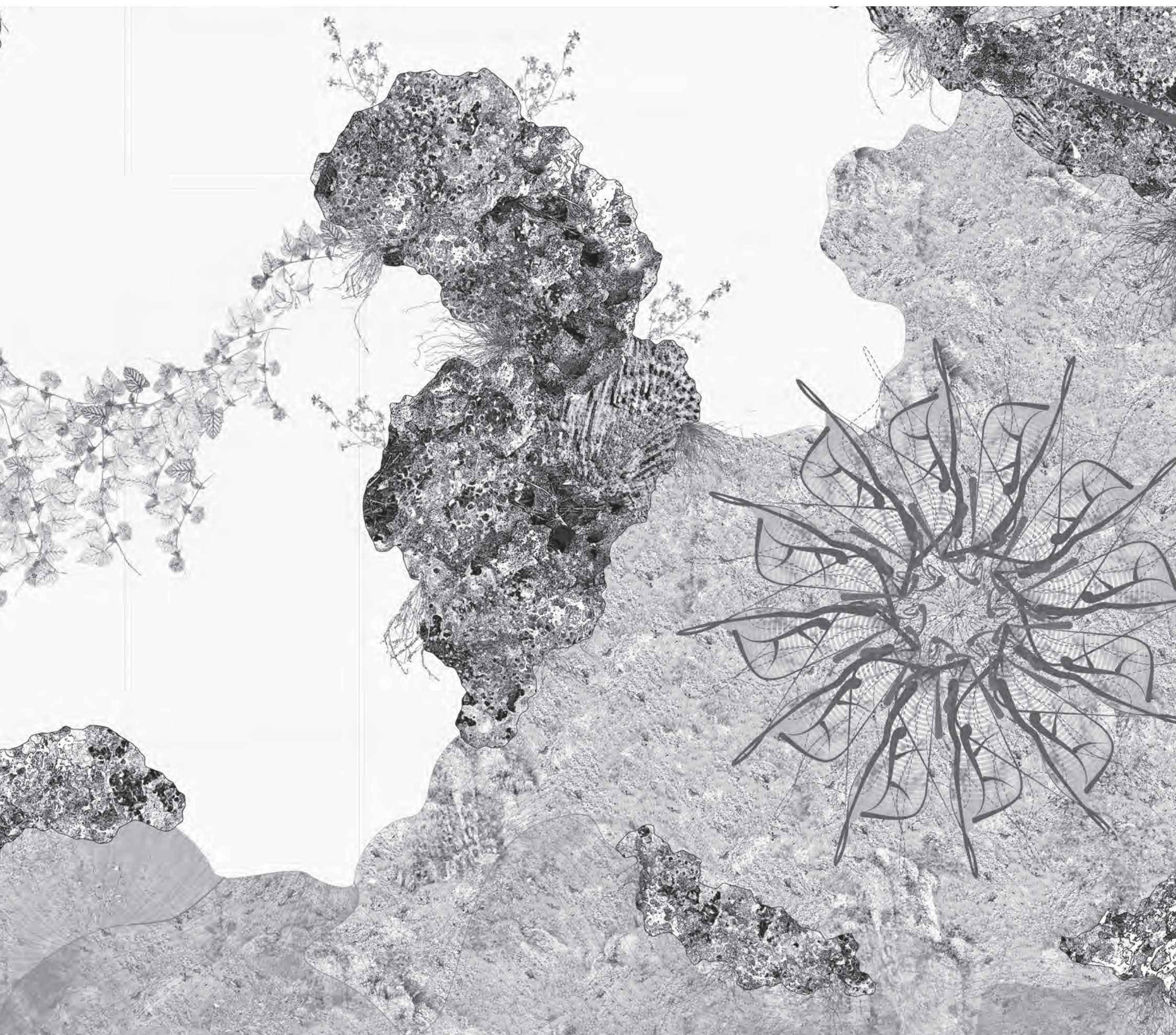


P.3.106b

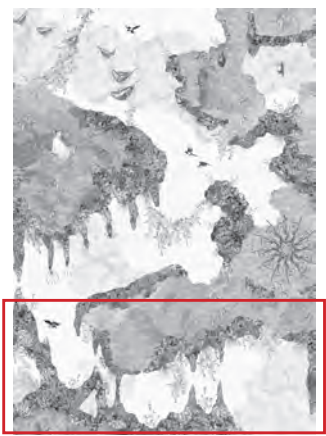


P.3.106b *Ruining a Ruin's* section 1:20, detail-2.

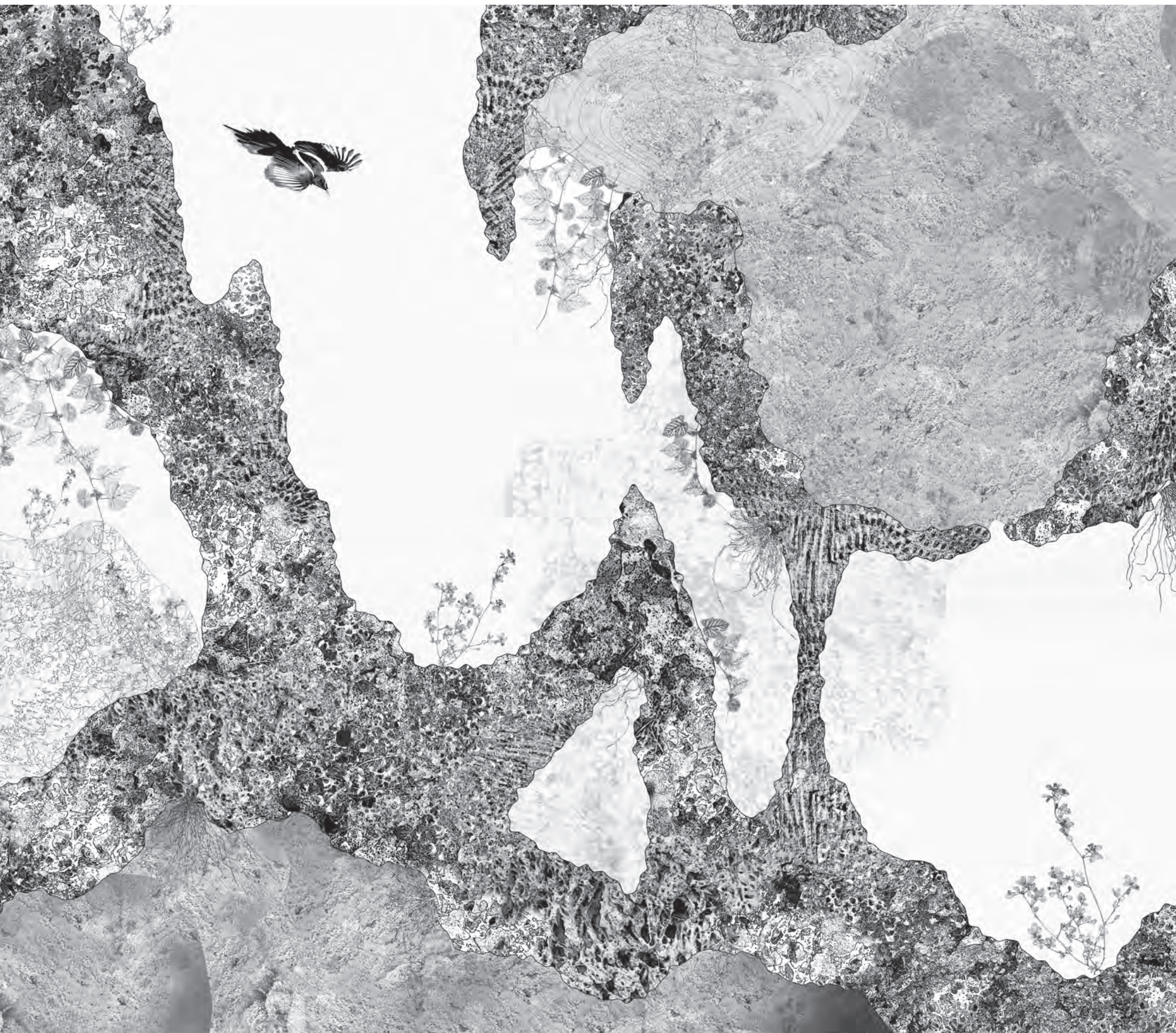






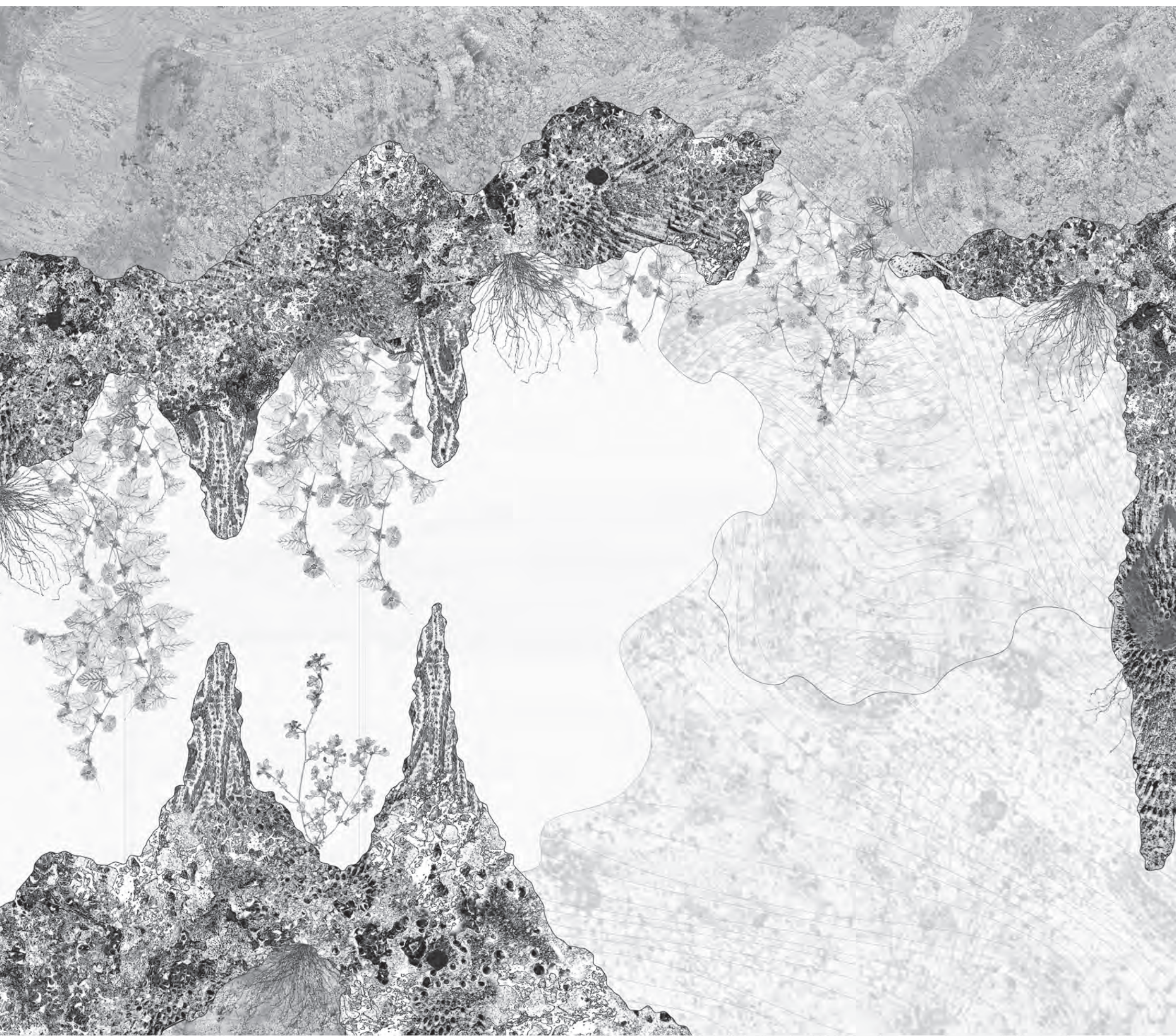


P.3.106c

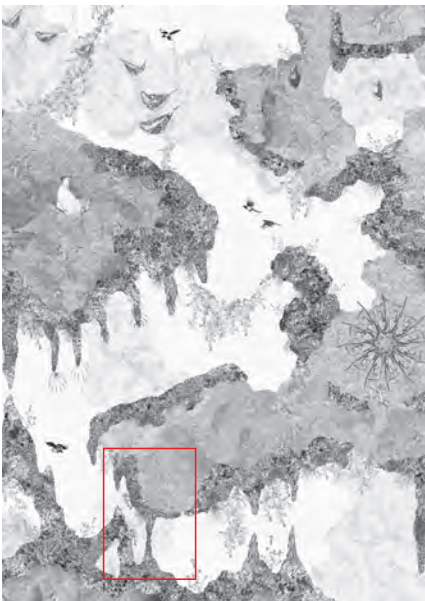


P.3.106c *Ruining a Ruin's* section 1:20, detail-3.







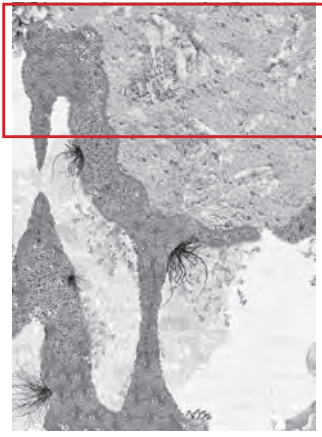


P.3.107 *Ruining a Ruin's section 1:4, in a time period of 100 days after the previous drawing.*

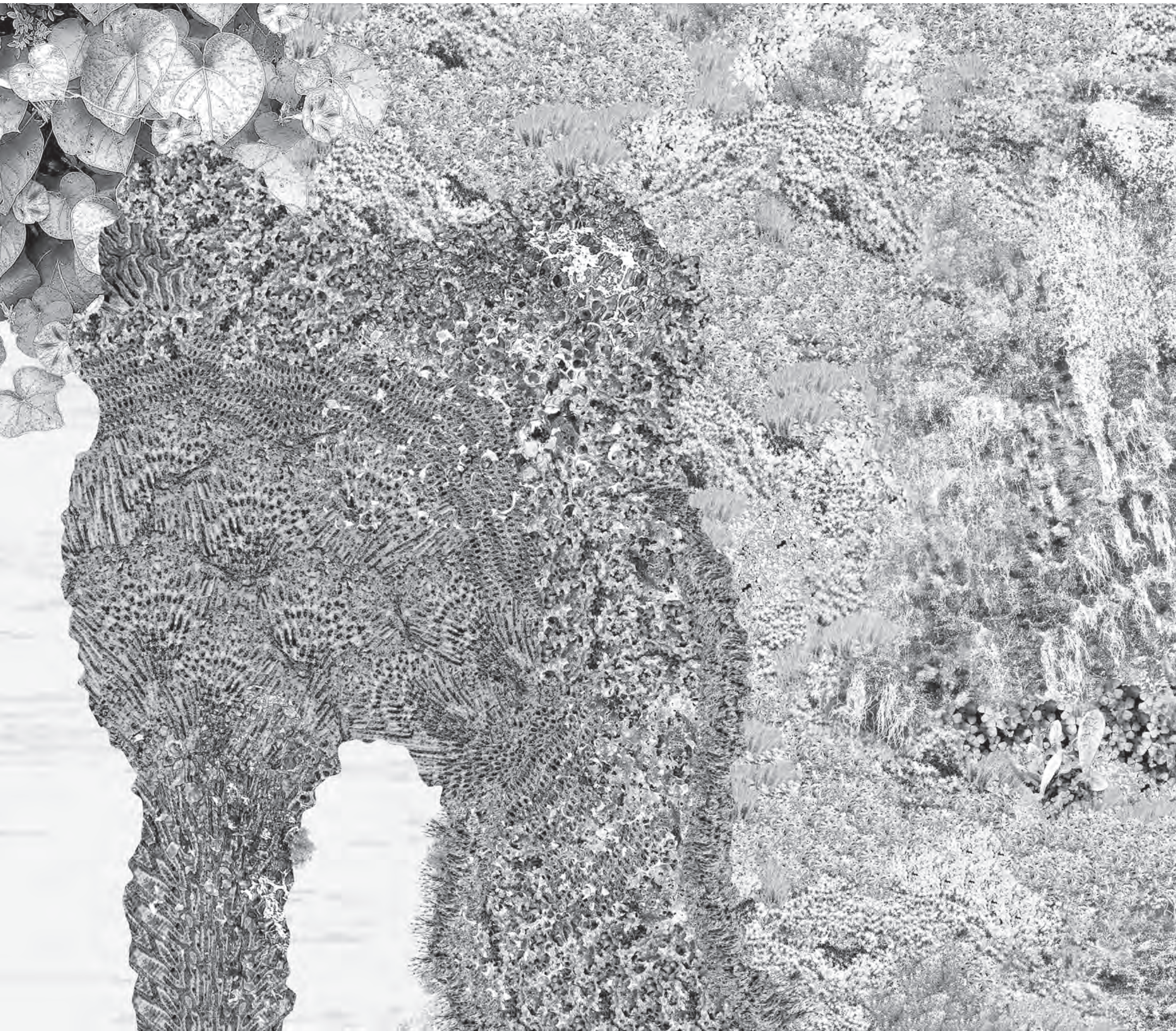








P.3.107a

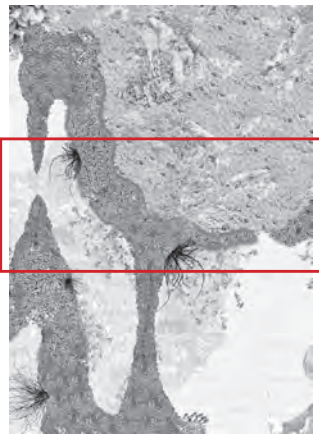


P.3.107a *Ruining a Ruin's* section 1:4, detail-1.









P.3.107b

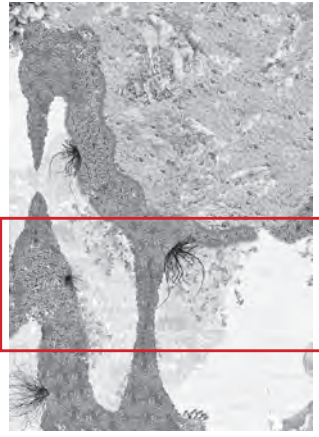


P.3.107b *Ruining a Ruin's section 1:4, detail-2.*

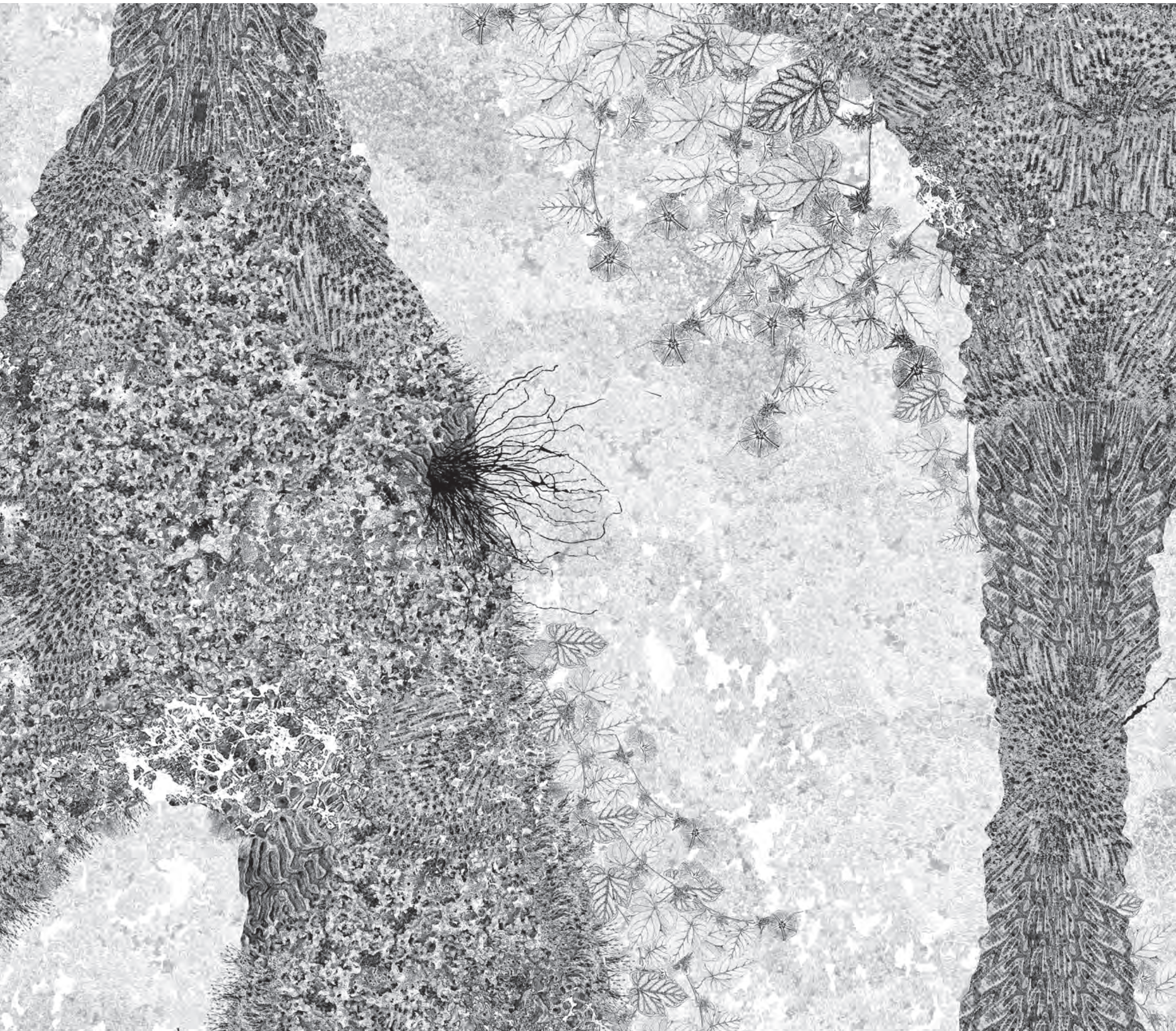








P.3.107c

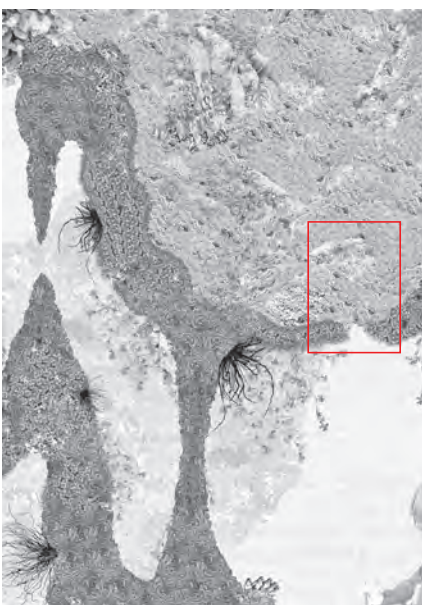


P.3.107c *Ruining a Ruin's* section 1:4, detail-3.



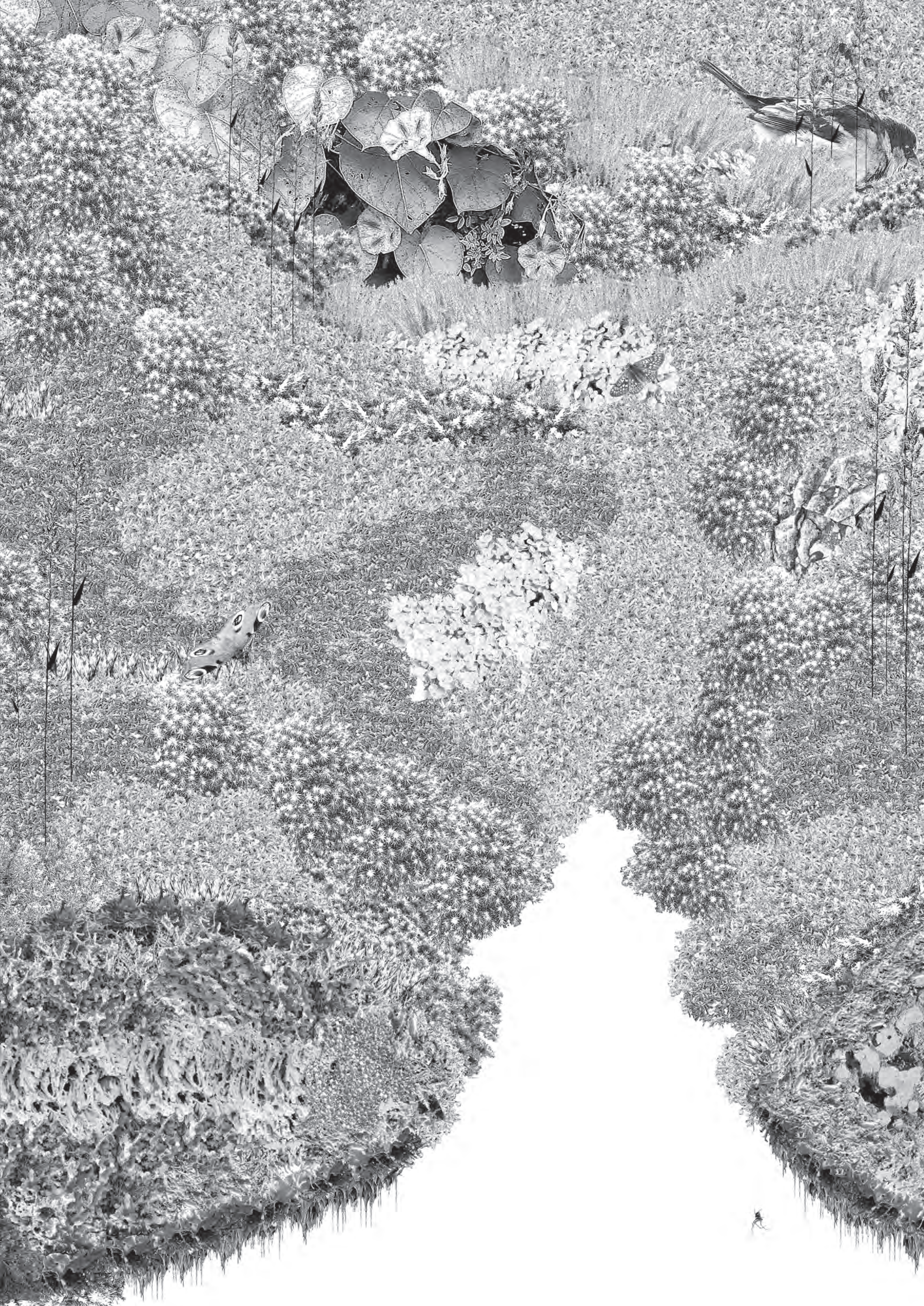




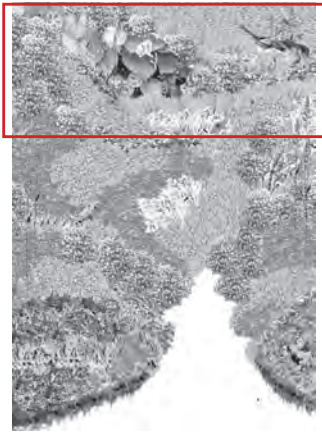


**P.3.108** *Ruining a Ruin's section 1:1, in a time period of 100 hours after the previous drawing.*









P.3.108a

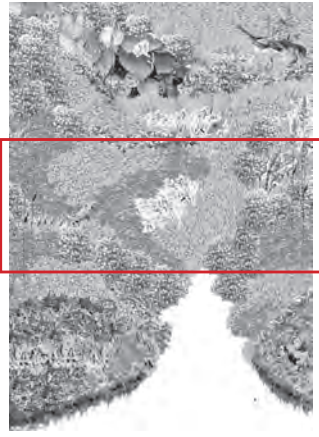


P.3.108a *Ruining a Ruin's section 1:1, detail-1.*







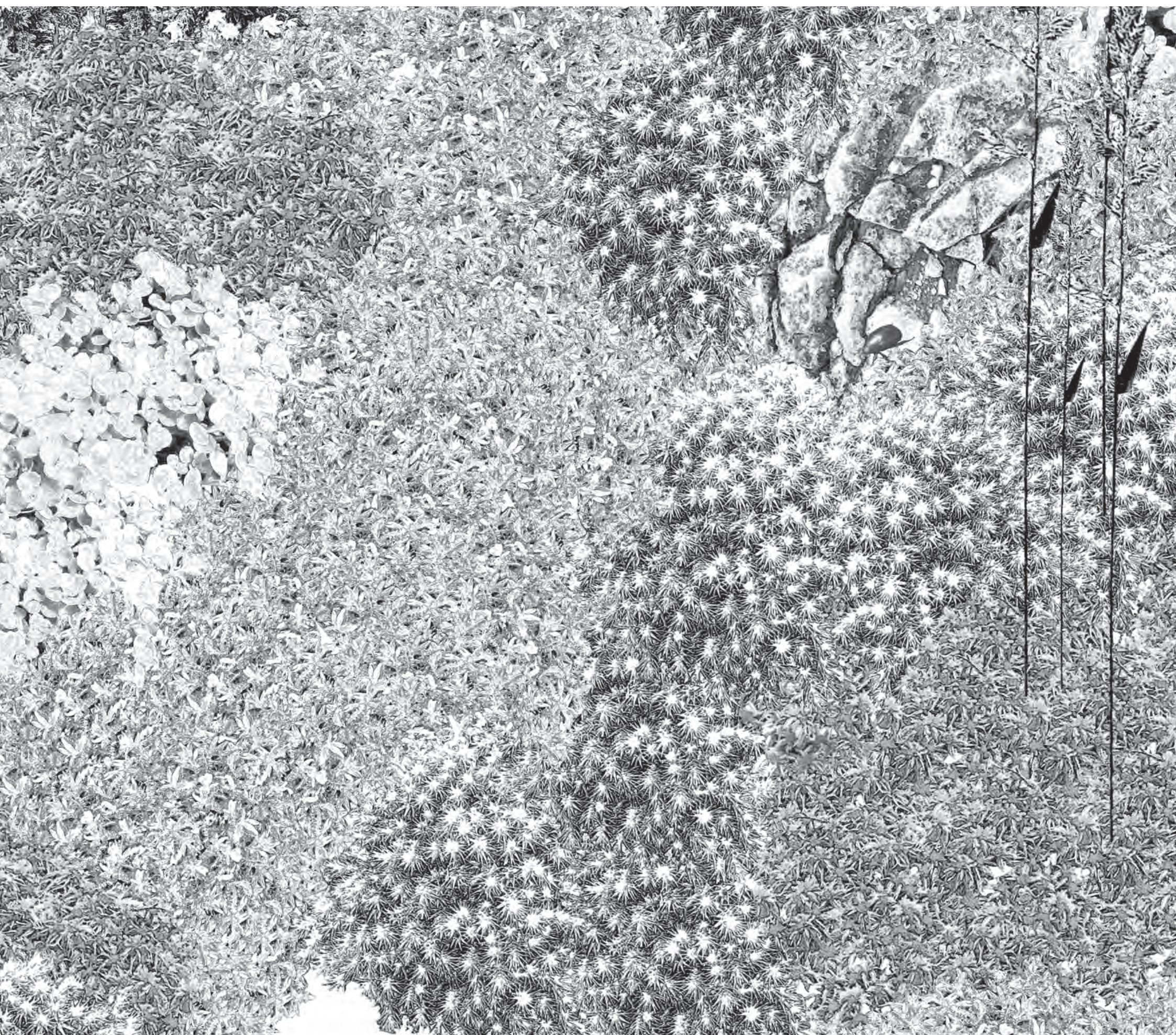


P.3.108b

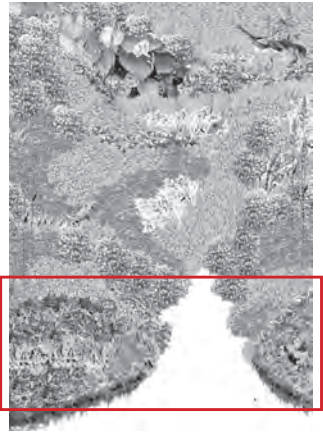


P.3.108b *Ruining a Ruin's section 1:1, detail-2.*

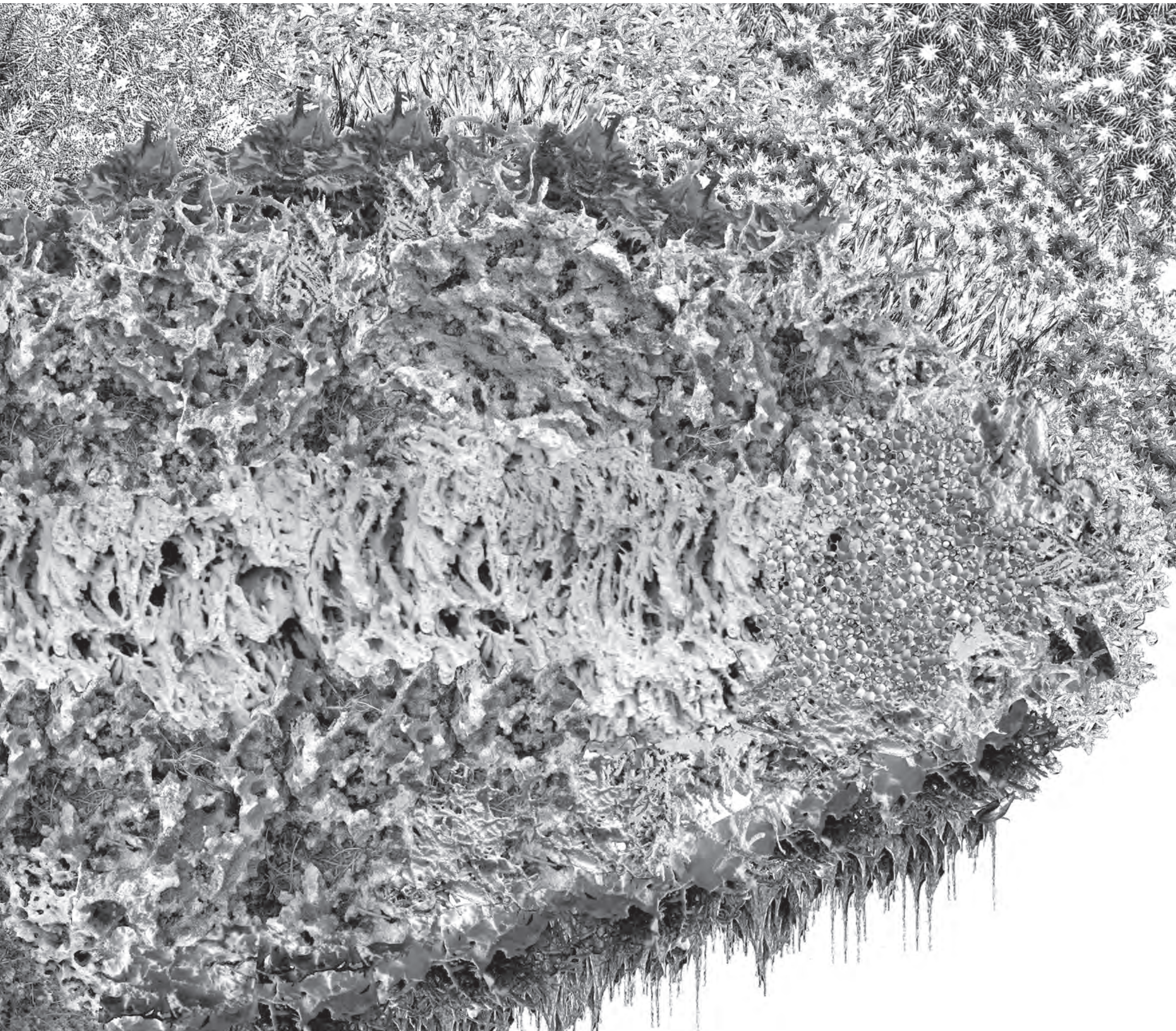






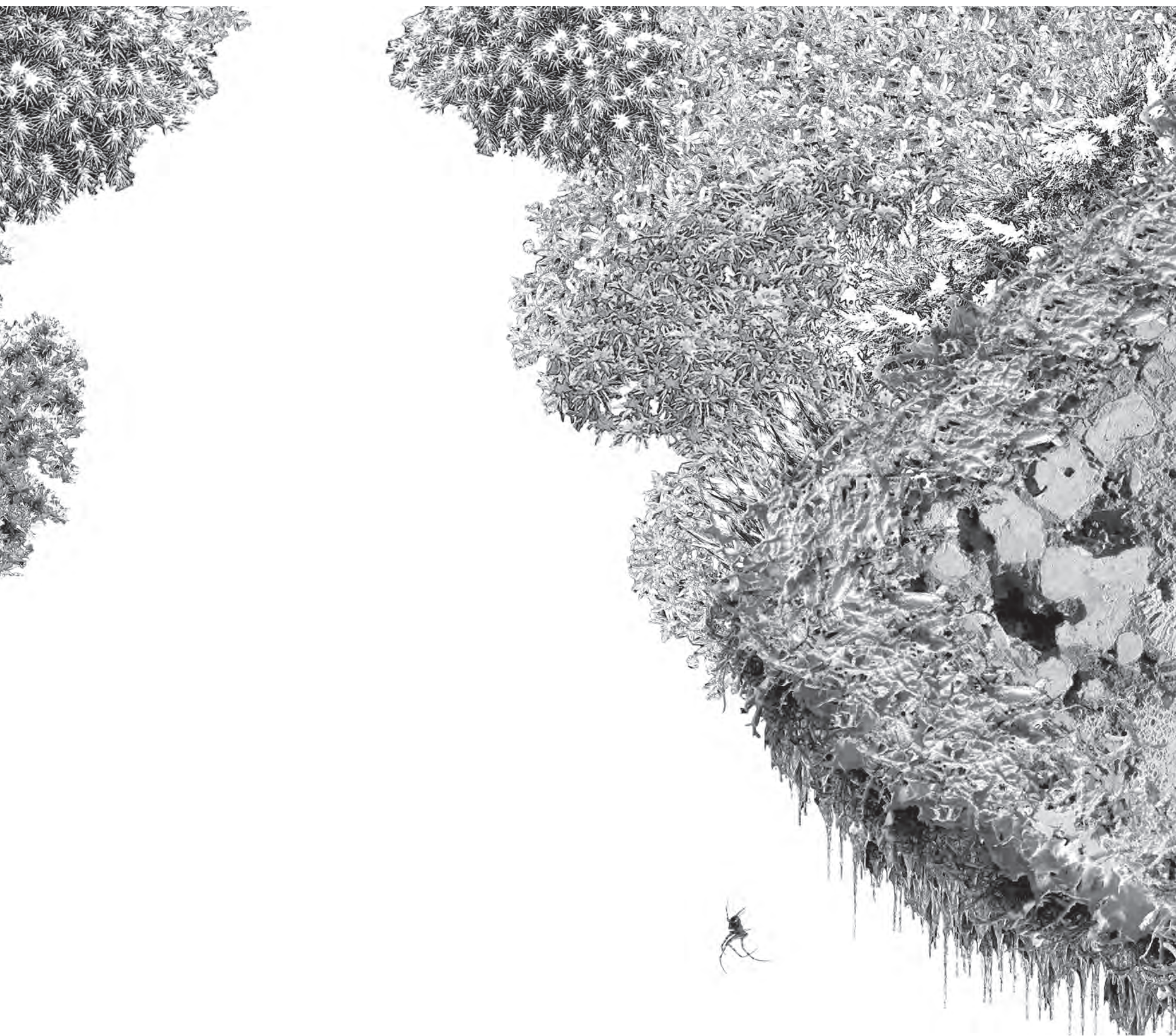


P.3.108c



P.3.108c *Ruining a Ruin's section 1:1, detail-3.*







## 6.4 Appendix to drawing panels

Information on weathering instruments, fauna and flora introduced in *Ruining a Ruin* can be found on the appendix formed by the following set of drawings.

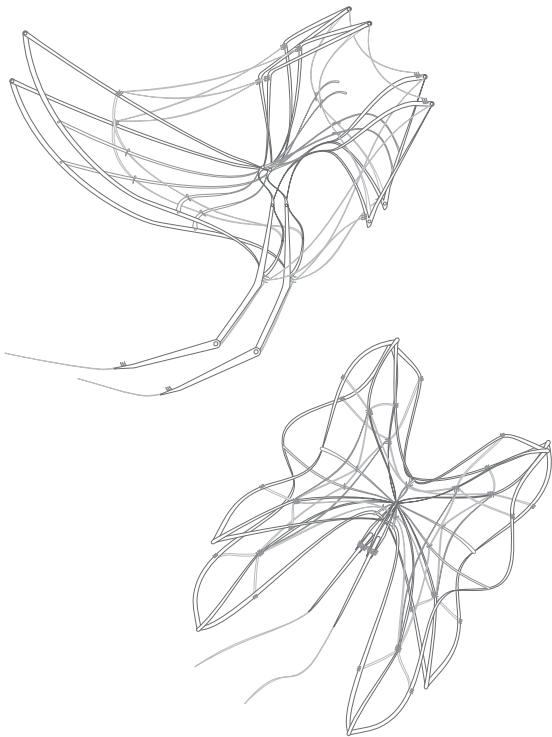
The inventory of weathering instruments (fig P.3.109) breaks up the weathering instruments into three categories in respect of their incentive: wind/air, water and building-grower/user. It provides technical information and working principles regarding each instrument which is drawn in greater details instead of calligraphic lines as shown in other A1 drawings.

*Ruining a Ruin's* biotope chart (fig P.3.110) first provides information on the monoblock's material compositions and their calcification experiments that constitute the monoblock's structural core. It also describes the travertine's principle of formation then details the bio-indicator role played by the project's fauna and flora.

The tending almanac reports the bio-indicator plants, insects and birds that invest the garden monolith on a monthly calendar (fig P.3.111). It indicates their average lifespan and period of reproduction which can then be read in relation to the interaction dynamics or water chart panel and to the 1:1 scale evocative drawing to complete their informative or evocative aspect.

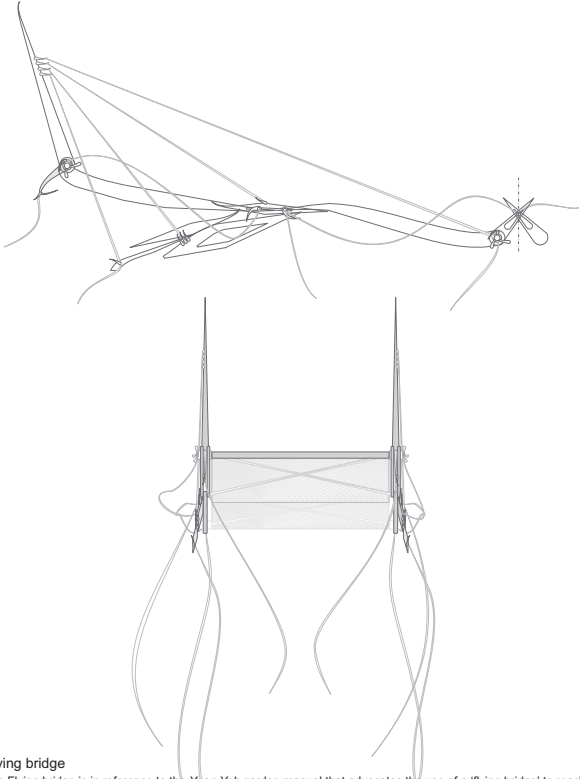
This appendix is kept and updated by building-growers. It not only helps them to manage the planting/pruning of plants and the weathering instruments, but it also helps them to monitor the flourishing biodiversity within the project.

movable bridge mechanism



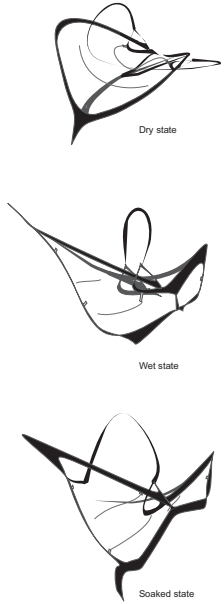
Giant Kites

Inspired by Japanese giant kites, these kites offer bamboo ribs with a textile made of sphagnum moss woven together with horticultural fleece (about 10m2). They are anchored to the surrounding EU buildings and fly at a wind speed of 5-6m/s at about 60m above ground, thanks to the tunnel effect and wind condition enhanced by the presence of high raised building. The Flying bridge hangs to these kites by moss ropes. The kites' position and altitude define the access to the bridge from the ruin and the neighbouring EU buildings. They accumulate PM10 (suspended particles in the air) on their wings' fabric.



Flying bridge

The Flying bridge is in reference to the *Yuan Yeh* garden manual that advocates the use of a 'flying bridge' to reach the rock in the middle of a pond in a Chinese traditional garden. This bridge connects the existing EU building to the ruin according to the atmospheric condition of the day. Mostly made out of a galvanized metal and bamboo structure, it is articulated in different points that are either indirectly manipulated by the giant kites and water condensers, either directly adjusted by the building-grower.



Water condensers

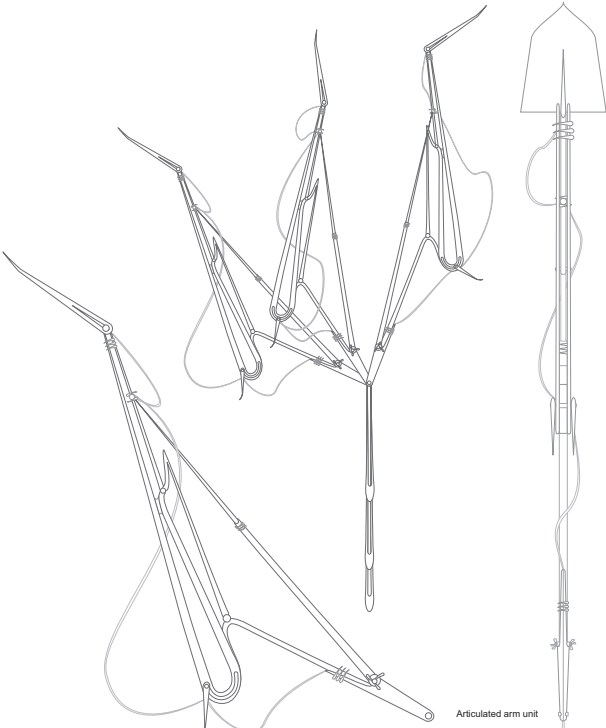
Like the rain calabashes, the water condensers have a hard willow or bamboo frame on which a flexible membrane made of moss and galvanized wire woven together is stretched. Humidity reigning within the ruin condensates on the moss membrane according to the air temperature and the percentage of relative humidity. The resulting water droplets, dews and rain are collected in the membrane that progressively expands like a pocket under the wet weight. They hang under the Flying bridge and control through their weight its accessibility from the ruin and the EU building's roof.

Discreet weathering instruments



Oriental tending fans

These tools are inspired by oriental fans. They consist in a bamboo pole with a bamboo frame on one end, onto which is stretched a sphagnum moss sheet, and a gardening tool attached on the other end. Fans are then strung together on a galvanized rod to freely move or rotate according to the wind pattern. They progressively erode the ruin or tender the plants growing on the ruin. The building-grower needs to choose and replace the worn out gardening tools with new ones according to his purpose on that specific location. They accumulate PM10 (suspended particles in the air) on their moss fabric.



Articulated arms

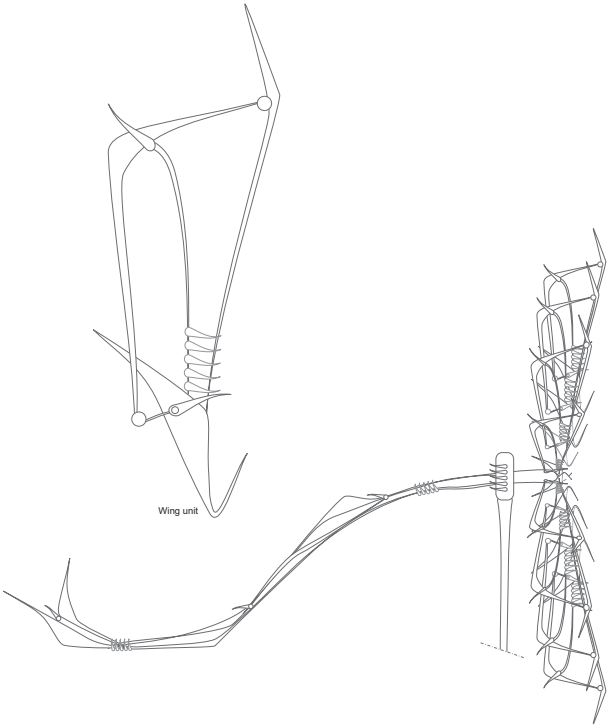
Made out of galvanized metal structure, these mechanical arms work through a system of pulleys and counter-weights. They act in two manners: either as a damaging, scraping tool, either as a supporting tool that prevents parts of the ruin from collapsing and maintain them in shape until they solidify. They are placed by the building-grower onto the neighbouring EU buildings before being gradually anchored directly onto the ruin as it slowly hardens. Their counter-weight absorbing rain-water, the arm's movement also acts indirectly as a rain gauge.



Rain calabashes

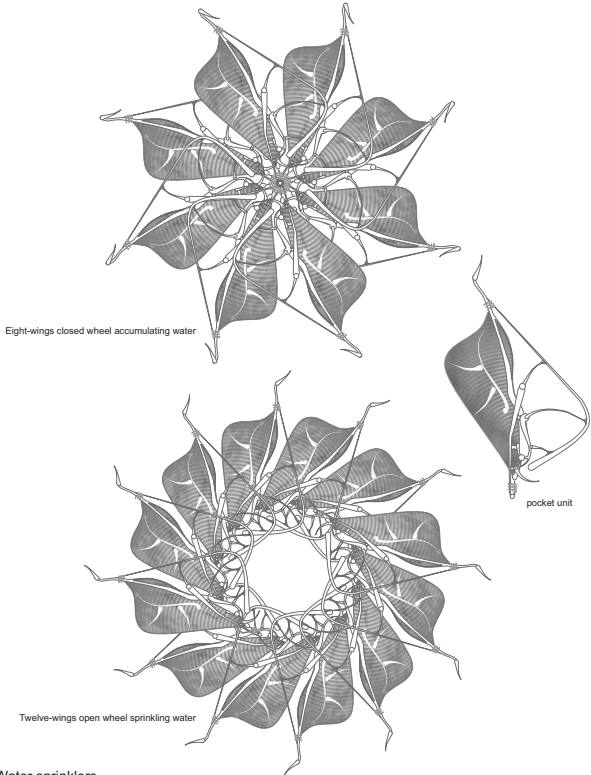
Rain calabashes are composed of two elements: a willow or bamboo frame holding a sponge body covered with a horticultural fleece. The sponge body absorbs rain or water percolating through the ruin while the fleece protects the sponge from frost and insects. These calabashes participates in modifying the ruin's shape: they are hung to specific places where their fluctuating weight applies pulling forces that cause tears and shears in the ruin. They can be moved around the ruin by the building-grower.

Water pumping-distributing mechanism



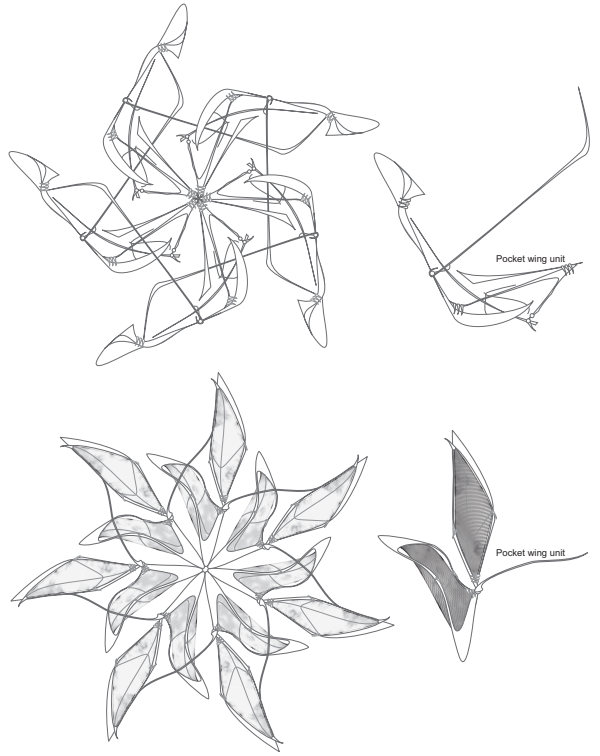
Wind turbine

The wind turbine is made of a galvanized metal and bamboo structure with wings covered with sphagnum moss sheets. Through simple mechanism, it pumps up water from the city into the ruin to nurture its moss and plants and helps maintain the ruin's level of humidity. It is frequently tended by the building-grower as the city water is rich in calcite deposit clogging the pumping system. The sphagnum moss sheets also collect dust and metal deposit drifting in the air. They are analyzed later in a laboratory to monitor the surrounding air quality.



Water sprinklers

They are watermills with flat pockets that are filled with city water alimented by the wind turbine. Once the pockets are filled, their weight triggers a mechanism that "opens" the wheel and tilt the pockets in a position where water is released with high pressure. According to needs, the wheel can have up to 12 pockets that can be individually dismantled and replaced by the building-grower. It helps to maintain the level of humidity within the ruin. The pocket is also used as a sample to monitor the water quality within the area.




Water wheels

Made out of galvanized metal, bamboo and textile made of sphagnum moss woven together with horticultural fleece, these wheels are activated by the wind turbine to bring the city water up in the ruin. In the beginning, the wings are inefficient as the textile making the wings or pockets are soft and water filters through. Yet in time, the pockets get slowly coated with a limestone layer, due to calcareous deposits of the city water setting in the fibers of the textile. Once too heavy to work, they need to be replaced by the building-grower.




Alternatives to conventional building materials

Alternatives to conventional building materials are tested in order to create a project that evolves from an initial monolith that has an alveolar structure reflecting the oriental notion of the void and full, so that not only the spatial organization but also the material composition reflect its principles. In this context, open-cell foam, compressed sponge, peat pot, peat pellet, floral moss and sphagnum brick are chosen for experimentation.




Growing basil seeds experiment

Tests are carried out to grow seeds of basil on different alternatives to soil (open-cell foam+soil, compressed sponge, peat pot, peat pellet, floral moss, sphagnum moss) with regular watering (no additional nutrients). Once the speed of growth is defined, the frequency of watering is reduced to see what matter would best keep the plant alive. Then the samples are left to dry to see any signs of shrinkage or sedimentation process.




Moss spray

All these previous materials can be sprayed with a mixture of sugar, chopped common moss and buttermilk or beer. This mixture needs to be kept continuously moist for a few weeks for the moss to get firmly anchored on the surface. Anna Garforth, an english artist/designer uses this technique to create her "mossenger" (a moss graffiti-message) on London city walls.




Floral foam

Floral foam is an open-cell foam presenting a cellular structure similar to the one found in flower stem. This allows the foam to absorb water by capillarity and retain water in its cells up to 40 times its dry weight. It also offers a quick wicking speed and minimizes water loss when saturated. When dried or over-saturated, the floral foam becomes friable and breaks up easily.




Peat pellets

A peat pellet is a disk of compressed peat mixed with nutrients often wrapped in a biodegradable mesh. Once water is added, the pellet swells in a cylinder up to 7 times its original height. The peat pellet serves as a pot with the necessary nutritive soil to grow seeds into seedlings to be safely transplanted in the ground once roots crawl out under the peat cylinder.



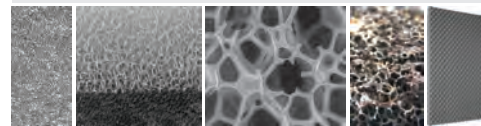
Compressed sponge

The compressed cellulose sponge is a biodegradable foam sponge that has been thermally compressed up to 1-3mm thick in dried state. Once wet, the sponge swells up to 5 times its original thickness and absorbs up to 10 times its own weight.




Open-cell foam

Obtained by introducing in a plastic polymer matrix a chemical (ex: sodium bicarbonate) that releases CO2 when decomposing. Tiny pockets are then formed in the polymer with walls that get partially broken. This porosity makes the foam light and adsorbent to the surrounding environment (air/water), giving the foam panel its particular flexibility and suppleness. The plastic can derive from soybean or corn oil and get hydrophilically treated (dissolving in water). Its usage ranges from dust filtering to acoustic and thermal insulation.




Peat pots

A peat pot is made from peat compressed into small containers that collect seeds to grow. Once the seedlings' roots pass through the pot, it can be safely transplanted to the ground while the peat pot naturally disintegrates. Peat is mostly made from decaying sphagnum moss mixed together with other spongy plant materials that are used as fertilizer or fuel.



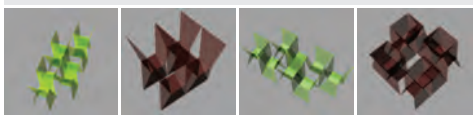
Soil blocks experiment

A soil block is a blend of peat, compost, soil and sand compacted into a particular shape to grow seeds into healthy seedlings that can be safely transplanted to the ground once their roots develop to maturation. It makes a good alternative to peat pellet as it also presents the plant with both container and soil. In the long run, the roots overtake the soil and solidify the block.




Peat pots module experiment - prototypes I

Starting from an existing array of peat pot, their walls are folded in different directions in order to create a variation on open/closed configurations that can accommodate in its interstices other tested medium.



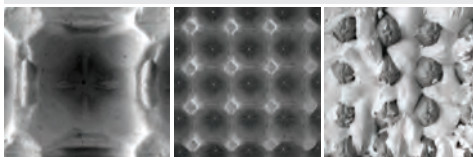
Peat pots module experiment - prototypes II

An alternative to peat pots module is the paper pulp molded egg tray. They offer great variety in shape and size that can be stacked and filled with other tested growing medium. However, some might present a higher degree of acidity depending on the glue component, which makes growing superior plants more difficult.




Peat pots module experiment - prototypes III

An alternative to peat pots module is the paper pulp molded egg tray. They offer great variety in shape and size that can be stacked and filled with other tested growing medium. However, some might present a higher degree of acidity depending on the glue component, which makes growing superior plants more difficult.




Petrification experiment - moss

From the alveolar materials chosen for the project, the open-cell foam, peat pot, sponge and moss are taken further to see how they would act if covered by a layer of caliche. Plaster was used to mimic this effect (knowing that its acidic pH is opposite to calcareous environment). The sphagnum moss readily absorbs the liquid plaster. Plaster flakes do not get brushed off the moss easily.




Petrification experiment - compressed sponge

From the alveolar materials chosen for the project, the open-cell foam, peat pot, sponge and moss are taken further to see how they would act if covered by a layer of caliche. Plaster was used to mimic this effect (knowing that its acidic pH is opposite to calcareous environment). The sponge swells absorbing water from the liquid plaster but the plaster cannot go through the sponge lower layers solidifying only an upper crust.




Petrification experiment - open-cell foam

From the alveolar materials chosen for the project, the open-cell foam, peat pot, sponge and moss are taken further to see how they would act if covered by a layer of caliche. Plaster was used to mimic this effect (knowing that its acidic pH is opposite to calcareous environment). The open-cell foam tends to bow and buckle under the plaster weight but still offers a light suppleness according to the amount of plaster applied (the slight shrinkage is neglected as plaster tends to shrink as it cures).




Petrification experiment - peat pots

From the alveolar materials chosen for the project, the open-cell foam, peat pot, sponge and moss are taken further to see how they would act if covered by a layer of caliche. Plaster was used to mimic this effect (knowing that its acidic pH is opposite to calcareous environment). The peat pot absorbs in water from the liquid plaster, leaving dried plaster flakes on its walls that tends to peel off. It becomes easily breakable.



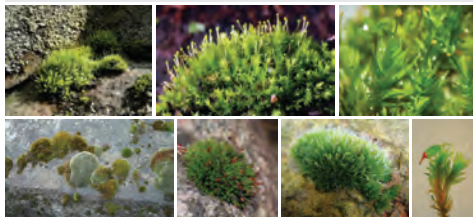
Sphagnum moss

Sphagnum moss thrives well in acid environment and its propagation in an area indicates an augmentation in its water acidity. Capsules of dried sphagnum moss can also be plunged in rivers to monitor its water quality. Sphagnum moss also accumulates metal pollutant such as Zinc (Zn), Cadmium (Cd) and Lead (Pb) on their leaves.



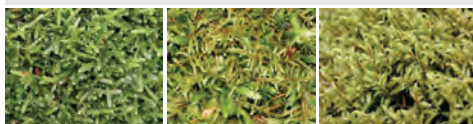
Aulacomnium Androgynum and Grimmia Pulvinata

Aulacomnium Androgynum and Grimmia Pulvinata are commonly known as pin-cushion or bun moss and found thriving on concrete walls of our cities. They are good bio-indicator detecting the level of SO2 and NO2 contamination in the air with the thinning of their biomass. Grimmia Pulvinata develops well in calcareous environment (pH>7).




Hypnum Cupressiforme and Pleurozium Schreberi

Carpets are formed by feather looking mosses called Hypnum Cupressiforme and Pleurozium Schreberi. They are good bio-indicators for Mercury (Hg), Silver (Ag) and Beryllium (Be) metal particles found in polluted air and water.




Cratoneuron Commutatum and Bryum Pseudotriquetrum

Mosses commonly found around sources of travertine are the Cratoneuron Commutatum and the Bryum Pseudotriquetrum. Their leaves get slowly encrusted with drifting deposits of calcite, building layers after layers a stone called travertine. Holes found in the travertine originate from the gaz released by dead bacterial colonies and other decomposing mosses leaves.



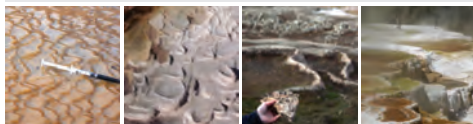
Formation of Travertine

Sedimentary stone formed when water saturated with Calcium Carbonate (CaCO3) liberates Carbon Dioxide (CO2) due to a sudden change in pressure or temperature and precipitates deposits of calcite or aragonite onto surrounding biotic materials (moss/algae). Reciprocally, the stone provides the right ecosystem with bacterial colonies for moss/algae to grow. New layers of moss grow on top of old encrusted ones, which are then lithified by the drifting deposits. This process accelerates when water temperature rises as it enhances CO2 liberation.




Fractal quality of Travertine

According to research undertaken by scientists from the University of Oslo led by Pr. Dag Kristian Dysthe, the travertine presents a fractal quality that can be observed in its "Pool/rim shapes [are] similar on all scales".




Geomorphology of Travertine

According to research undertaken by scientists from the University of Oslo led by Pr. Dag Kristian Dysthe, the travertine presents a fractal quality that can be observed in its "Pool/rim shapes [are] similar on all scales".



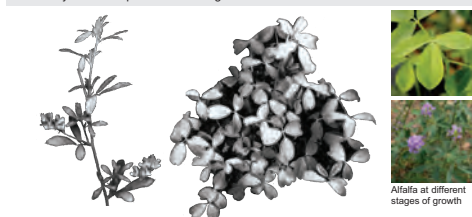
Time effect on materials I

As times passes by, some materials will decay under the weather while other will need to be replaced by the ruin tenderer. In the long run, plant roots will grow thick into a natural mesh keeping parts of the ruin from eroding while volatile materials are swept away by wind, accentuating thereby protruding elements of the ruin.



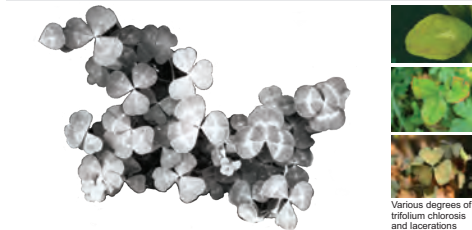
Medicago Sativa

Alfalfa is sensitive to the level of SO2 and NO2 (mostly emitted by car exhausts) found in the atmosphere. This can be observed in the thinning of its biomass, the height of the adult plant, the chlorosis of its leaves and the sulfur content analyzed in laboratory. It is often planted mixed together with subterranean clovers.



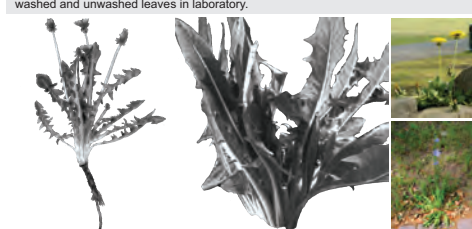
Trifolium Subterraneum

Subterranean clover is a native plant to Belgium that is self-fertilizing by developing its seeds underground and thrives in poor-quality soil where other clovers cannot survive. The European organism (UNECE) recognizes the sub-clover as a significant bio-indicator of phytotoxic ozone as its leaves go through various discolorations (chlorosis) before getting lacerated depending on the level of exposure.




Taraxacum Officinale Web. and Cichorium Intybus L.

Chicory (Cichorium Intybus L.) is a native plant to Belgium. Together with the Dandelion (Taraxacum Officinale Web.), it resists various climates and thrives in any types of environment making them both good bio-monitors for heavy metal pollutants Lead (Pb), Cadmium (Cd), Copper (Cu) and Zinc (Zn) that they accumulate in shoots, roots and rhizomes. One method is to measure and compare their concentrations in washed and unwashed leaves in laboratory.




Ipomoea Violacea

This Heavenly Blue Morning Glory is a climbing plant whose flowers can be used as a bio-indicator monitoring the surrounding air quality. Its colour turns from deep blue to pink when exposed to a high level of CO2, indicating thereby the presence of an acid environment (pH<7). They get their nutrients from the morning dew and spread rapidly in a temperate climate.




Nicotiana Tabacum

This plant is regularly used in Europe as a bio-indicator monitoring the surrounding air quality. When exposed to high Ozone (O3) level, tobacco leaves show various brownish stains. The number of stains on a leaf, as well as its diameter and colour define the air pollution degree. They grow relatively easily in temperate climate, providing regular watering.




Phalaris Arundinacea

This Reed Canary Grass is a competitive perennial graminoid that grows in dry or poorly drained grounds by spreading its rhizomes in a thick net. This formation prevents lean friable soil from erosion but the grass is also used to filter polluted water. Its seed provides nutriment for birds.




Insects found in karst environment

These particular insects can be found in karst environment and help pollinate or propagate flora burgeoning in this project. Their presence or absence can be also interpreted as a bio-indicator for their habitat's pollution. They also constitute the nutriments for the local fauna (birds, bats, mice...)



Birds nests

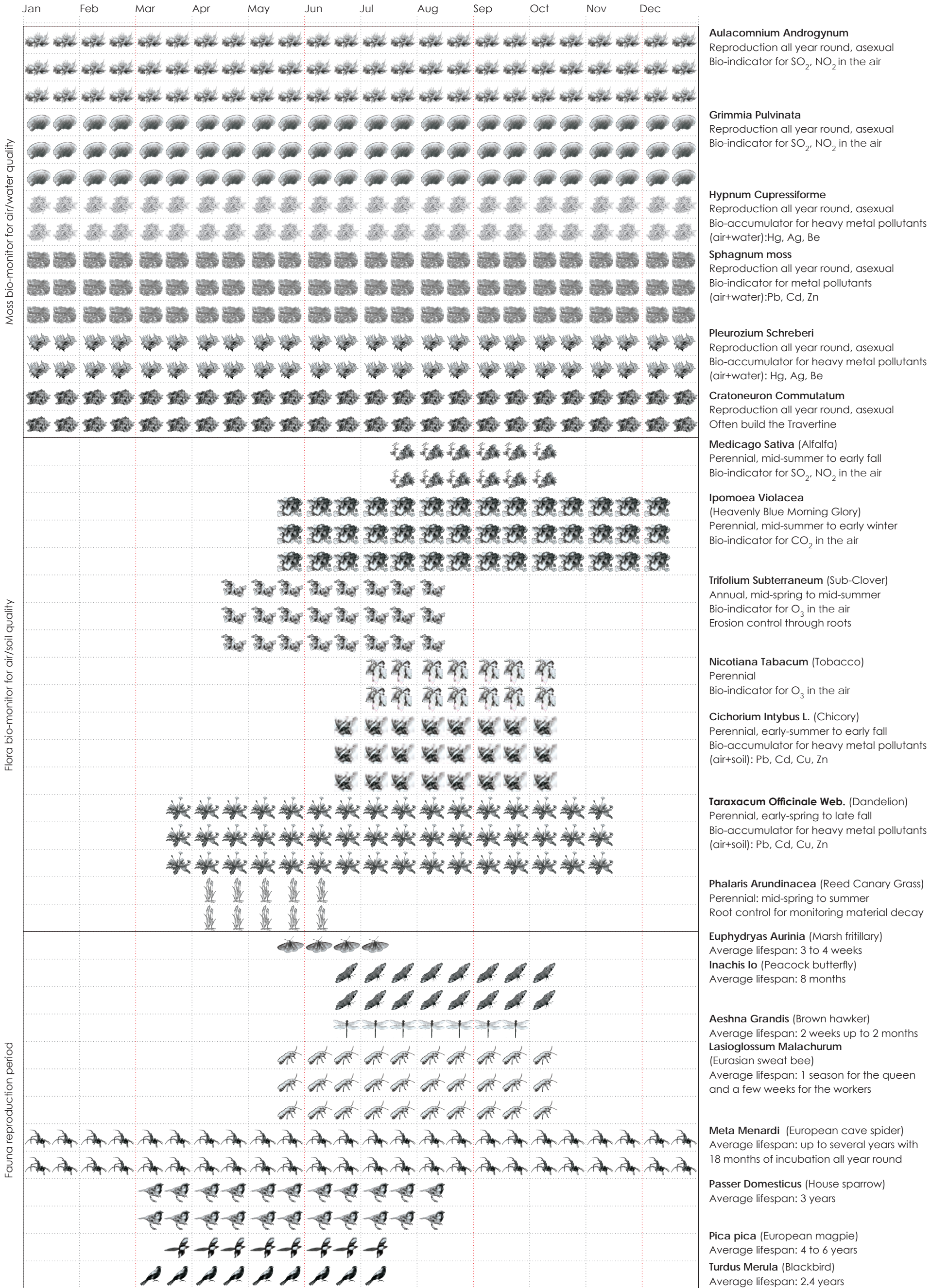
Most common indigenous birds found in Brussels city centre are the magpie, the sparrow and the blackbird. Hollows, grottoes and other accidents on the ruin surface can accommodate their nests and offer their offsprings the daily victuals (insects, larvae...). Thus this project contributes in the development of the urban landscape biodiversity.



P.3.110 Ruining a Ruin's biotope chart panel giving an overview of the material composition and the biodiversity found in the garden monoblock.

308





P.3.111 Tending almanach panel.

## 6.5 Video and handscroll

These videos show some early experiments I made with oil, ink drops and water in order to visualize my understanding of the oriental void. The first series present all the ingredients brought together in a bottle, while the second series show traces left by ink drops on an oil-coated glass panel. The digital camera was not directly filming the second series of experiments but filming images magnified on the wall by a retroprojector on which those experiments were made. This method allowed flaws and other blots to be captured in detail as well as giving a distance between me and the pictures for imagination to slide in.

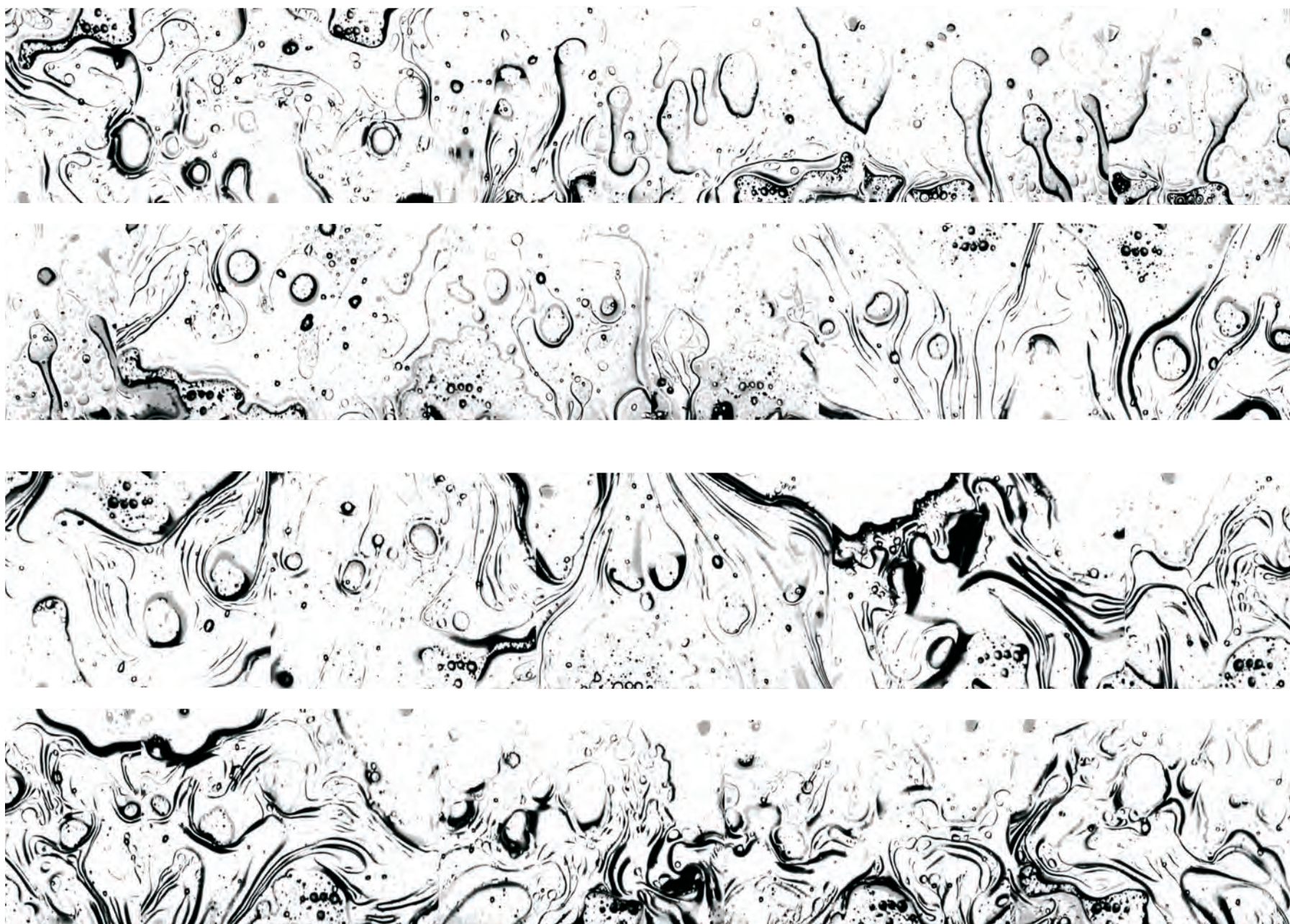
On a closer look, each video presents a landscape which seems to appear and gradually evolve in time. In keeping with the reciprocity, interiorization and mutation principles of the oriental void, some snapshots are taken from each video before being chronologically edited and put side by side on a handscroll. The former landscape then gives way to a succession of landscapes that can be interpreted at various scales, taking the viewer for a stroll through the ever-changing panorama. This completes the evocative drawings as a step further into the exploration of the ruin, as if one were observing a part of the 1:1 drawing at a scale 10:1 on a microscope (figs P.3.112–113).



P.3.112



P.3.113



P.3.112 Evolving landscape *Rubens' clouds*.

P.3.113 Video handscrolls evoking bacterial life within the monolith under the microscope.



## 7. Occidental portrayal of the oriental void

*Ruining a Ruin* was infused with the Taoist precepts of the oriental void in many different ways. For instance, time is encapsulated within the project as much as this project is carved through time. Indeed, through time the project collects traces left by its users, fauna and flora within the travertine's layers, accumulates air and water pollutants through its bio-indicator vegetation, and records the climate variation through its decaying process. *Ruining a Ruin* reflects thereby the *wu-wei* or non-action principle of the oriental void. It uses this effortless action to manifest silently the climate change at the heart of the European Quarter in Brussels.

Then the open-close rhythm of this ruin is reminiscent of the initial materials' alveolar structure, underlying thereby the synecdoche aspect of the oriental void. In fact, they introduce a fractal aspect to this project. Even though the same exact pattern is not disseminated and repeated at different scale throughout the garden monolith, the latter's morphology offers properties equivalent to the structural composition of its materials. Both can be full or empty of water, air, soil, dust, users, etc., owing to their characteristic permeability. Their sequence can be endlessly reversed, in-out/out-in, according to surrounding circumstances while addition or elimination of parts does not affect the essence of its whole.

Access to the speleological cavities in the garden monolith varies according to their status of being emptied or partially filled with water. On rainy days, some can be physically restricted for safety reasons yet various openings or passages offer glimpses onto rooms and scenes lying beyond that inaccessible space. The user can then endlessly extend those speleological formations according to his creative imagination. The garden monolith is therefore invested not only physically but also mentally, like Chinese gardens. Its physical inaccessibility evokes the Chinese garden's compartmenting walls that suggested the visual boundlessness of the place.

Furthermore, as in the oriental concept of the void and full, the project oscillates between two directions: a vertical and a horizontal movement. The vertical movement consists of an ascending movement of growing vegetation and calcification processes which are counterbalanced by its opposite, a descending movement of gravity mainly embodied by water and the ruin's disintegration. This overall vertical movement is also overlaid with a horizontal movement due to spongy materials swelling, shrinking and breathing. The latter movement regulates the accessibility to/from the project as well as the friction and connection with the

neighbouring constructions. In that manner, the project replicates, on a bigger scale, the essence of its material content. Scales in this respect appear interchangeable.

There is no distinctive program that dictates the spatial outcome to be occupied in a particular manner; this project can thus be hastily overlooked as gratuitous or useless. However, it is not a useless space but rather a space whose usage fluctuates in accordance with its dynamic interaction with users, climate and other surrounding buildings. These multiple exchanges generate new mutations within the ruin, which instigate, in turn, new potential uses of the initial space. This process continues on an endless loop without repetition, given that these mutations depend on ever-changing parameters. This principle embodies well the three movements of reciprocity, interiorization and mutation advocated by the oriental void.

From osmosis to symbiosis, the interaction between coating, spongy materials, weather and users constitutes the essential metabolism of my project. This process gradually converts the original monoblock into an organic living entity that participates in the negentropy of its ecosystem, by endlessly reprocessing its substance. This architectural biorhythm and ensuing metamorphosis perform as an occidental allegory to the oriental concept of the void and full.

## 8. Conclusion

*Ruining a Ruin* epitomizes the key mutation principle of the oriental void mainly through its continuous biophysical evolution through time. Strong and fragile, huge and delicate, the garden monolith can be perceived as a plant or living organism subject to the daily tending care of its building-growers and users. It becomes therefore part of a wider ecosystem that encompasses human activities, climate and the European Quarter in Brussels. Viability of this ecosystem depends then on the environmental policy introduced in the city by the European Union and on its practical execution by people tending the garden monolith. In consequence, the users, building-growers and the European Union are brought to reflect on architectural, urban and environmental legacies they leave behind to future generations. They contemplate their own transience and are then confronted by a conscious choice about their position on the larger issue of sustainability.

*Ruining a Ruin* thus triggers the Heideggerian awakening that enables users, building-growers and the European Union dwelling on earth,





through building/nurturing this garden monolith as their manner of being in the world. The garden monolith becomes a built thing, making room for the gathering of the fourfold: moss, plant and travertine establish the earth, weather and pollution compose the sky while users, building-growers and the European Union portray the mortals in a world offered by the divinities.

Current architectural practices often use green or living walls with fully grown plants as localized cosmetic interventions to quickly tackle or show concern for ecological issues. In contrast, *Ruining a Ruin* aims for the long term by patiently growing its own substance matter through various interactions with its surroundings but also through natural decay. In this perspective, the project consists in a true ruin for it doesn't just embody the idea of decay but is encouraged to decay naturally at its own speed. Yet paradoxically this slow, undeniable disintegration contributes to the consolidation of a potential ruin to come. This generates an endless cycle where the new ruin is built by ruining the existing ruin: the protean ruin. It is therefore through this decaying nature that the project as a whole addresses environmental issues.

Like English picturesque gardens, *Ruining a Ruin* displays an emblematic aspect in its questioning of the European Union's ecological values as well as expressive features designed by building-growers who indirectly shape the garden monolith by freely displacing and positioning the weathering instruments. The users then instinctively experience and inhabit the garden monolith following their creative imagination. Via this imagination, the garden monolith can be envisioned as an inverted grotto, an occidental void excavated in the air, thanks to its foraminate geomorphology, reminiscent of Chinese *Taihu* rocks or Chinese scholar stones. Its relentless evolution through time transforms this grotto into a myriad of other ones following its biophysical exchange with its surrounding environment. This transfers the occidental void of the grotto into a fluid space-time continuum of the oriental void.

*Ruining a Ruin* introduces through all these protean aspects the complex notion of the oriental void into the western architectural design process.







## Conclusion of Part III

The third part of the thesis brought a new appreciation of the abstract oriental void through the materiality and palpability of architectural projects as well as through the connections made with Heideggerian ideas on architecture. The *Bank's Barometer* investigated the reversibility/reciprocity principle of the oriental void using moss as a catalyst to turn inside out the inner activities of the Bank of England on its outer façade. The installation entitled *Sited Moss: Invading or Fading Architecture?* explored the interiorization process by focusing on the physical and psychological relations between the site and its users. *Ruining a Ruin* foremost embodied the mutation aspect of the oriental void by conceiving a project as a living entity whose architectural design evolved following its biotic interactions with other components of a wider ecosystem. All these projects were fundamentally connected to the site's fluctuating urban and environmental conditions, but also to their current economic, social or political situations. These relations not only affected the projects' narrative but also their architectural outcome as well as their mode of representation. It is in this manner that the oriental void infiltrates occidental architectural design.

## Thesis Conclusion

## 1. The hyphenation of the void

This thesis used the concept of the void to explore the cultural cross-fertilization of East and West. For the purposes of this study the void, as defined by Taoist teachings, was analysed in the context of traditional Chinese landscape paintings which visually illustrated the void's complex and elusive principles. By using this approach, nature emerged as an allegory for the void, as the diversity of natural phenomena provided an appropriate portrayal of the void's key principles of reversibility/reciprocity, interiorisation and mutation processes. This relationship was further corroborated by the observation of traditional eastern architecture which ultimately aspired to coexist in symbiosis with nature. As a consequence, traditional eastern architecture wholly embraced its transitory condition as a part of the greater unified whole in an ever-changing space-time continuum.

Influenced by Taoist philosophy, Heidegger raised the issue of the void in western architecture by declaring that architecture was fundamentally defined by the void of its architectural space rather than by its solid materiality. Heideggerian architecture was not conceived as the conventional self-contained entity that protected users from the outside environment, but as a built thing exposed, and exposing its users, to natural weathering. By awakening to the present moment and condition in this manner these users were then dwelling in the world by cultivating the built thing.

Following on from this discussion of the void, this thesis instilled the intricate nature of the oriental void into the realm of western architecture by referring to Heidegger's philosophy of architecture. This was achieved thanks to the tangible material and conceptual hyphens that embodied the abstract key principles of the oriental void. These hyphens were found in the biology and versatility of moss, the ambiguous and protean character of the ruin, the evocative and associative potentials of the English picturesque landscape garden, the foraminate morphology and emblematic transience of the Taihu rockeries' as well as in the biochemical reactions and collective/cumulative features of the grotto.

These hyphens were then combined and incorporated as a design incentive or vehicle in architectural projects that epitomized the oriental void. This practice of the void relied on the void methodology to generate an architecture that appeared as a living organism always in the process of becoming, in harmony with the vast ecosystem it grows in and caringly tended by its users. Consequently, the initial

cultural discussion on the void developed, rather unexpectedly, into an ecological approach to architecture.

## 2. Void methodology

The void methodology relies on the indifference principle: an absence of prejudice, coupled with an absence of priority. This process is not about the hegemony or homogenization of ideas; there is no hierarchy or chronology to respect.<sup>1</sup> Because of this indifference, one awakes to one's surroundings; the daily routine transforms into a succession of particular events. Elements that once went unnoticed appear to acquire new values, new meanings, thanks to one's heightened sensitivities and intuitions. It is only then that the hyphen gradually appears, unforced and evident. This void methodology is therefore a creative and refreshing process.

The thesis developed organically according to this methodology. It started with disparate issues influenced by both my oriental identity, and my occidental education. Those issues, like the oriental void, the moss and John Soane, developed independently at first yet some convergences and divergences slowly appeared, creating thereby multiple interconnections that cross-fertilized each other's original concepts. These connections, like the ruin, the picturesque landscape, Heidegger or the *Bank's Barometer*, developed again according to the same pattern in a feedback mechanism, amid a dynamic and fluid situation. This methodology generated thereby a self-emerging system made of hyphens, constantly attuned to an ever-fluctuating environment. This reflected the three key principles of reversibility/reciprocity, interiorization and mutation processes of the oriental void that succeeded one another in an endless cycle. The decision to work in the long term on *Ruining a Ruin* introduced another dynamic in this expanding network of hyphens. This project re-shifted and brought all hyphens in a new configuration that generated the project's narrative, material experiments and final outcome. Acting as the oriental median void, *Ruining a Ruin* joined thereby the thesis's theory and practice into one smooth continuum.

This network of hyphens is boundless as it can be continuously prolonged by new connections. As a result, this research could be further developed by delving into the budding hyphens that appeared through my projects. For instance, the world of weather forecast or biophysical reactions could be explored as another path to sustain the role of the void in architecture.





Visual representation or mapping of impalpable information could also be investigated so that cultural, environmental, biophysical, financial or political data could be envisioned alongside architectural plans, sections and elevations.<sup>2</sup> These drawings would assist in contextualizing a project within a wider environment and within an active society, akin to site plans that topographically or geographically locate the project within the urban grain of the city.

### 3. Architecture of the void

The practice of the void generates architectural projects that are not self-contained entities within an urban context but living components growing through their continuous interactions with their surroundings. The latter consist in the ecological and urban environment and the users, but also in the socio-cultural, economic and political backgrounds that form the nutrients necessary for the survival of these projects. These factors are not easily quantifiable or palpable, which makes their integration difficult in architecture. However, they indirectly shape its outcome through vernacular typologies or indigenous building methods, through various fluctuating costs involved in material development or transport and through sustainable urban policies dictated by local authorities or international political bodies. Thus this architecture of the void paraphrases nature; it grows through dynamic metamorphoses by continuously affecting and responding to its environment in a cyclic manner. It expands thereby beyond the site's boundaries to participate in the equilibrium of a vaster ecosystem.

Approaching architecture as a living, cyclic metabolism involves that decay also becomes an intrinsic part of the building. With time, building techniques wear out and materials erode while the initial design becomes obsolete due to the relentless renewal of the user's needs and desire. This inevitable decay should not be disregarded but embraced as a constructive criterion to integrate the passing of time as a positive factor. It should be incorporated within the initial architectural design as suggested by the Construction Design Management 2007 regulations in the United Kingdom, requiring from architects buildings that are safe to build, safe to use, but also safe to demolish.<sup>3</sup> More precisely, CDM regulations stipulate that risks should be avoided or at least reduced to a minimum during demolition. If hazards cannot be prevented, a manual should provide information about the building's structure, techniques and

particularities that will assist in devising a reliable way of dismantling the building. In other words, architects should anticipate the possible ending of their construction.

This idea of incorporating the gradual decay or demolition of a building in its design process is also a means for architects to rethink the act of building itself. This idea is suggested by Toyo Ito who witnessed the demolition of his villa G in 1997:

Up till then, I had never had to think about the image of my buildings at the time of their disappearance. Most architects have probably rarely the opportunity to think about it. We're too concerned by the idea of building. As soon as a building is finished, it becomes independent and it acquires a presence that confronts us face to face ... That is why I wasn't disturbed then: what had to happen simply happened. But the demolition of the villa G was something else. I discovered something that questioned the very core of architecture. I couldn't avoid calling into question the act of building, which beforehand I had accomplished everyday as if it was self-evident.<sup>4</sup>

By conceiving building as nurturing a plant, the architecture of the void naturally integrates and accepts the passive decay prompted by climate, pollution and vegetation. Following the Taoist bipolarity, this ruining process is nevertheless balanced by the active engagement of the building-grower/user who ensures the building's growing health by monitoring its physiological disparities and by restructuring or relocating accordingly its biophysical interactions with the surrounding environment. This fluid interaction between building, users and surroundings prompts the architecture of the void to oscillate between the complementary growing and decaying phases of the building. In other words, decay encompasses in essence the rebirth of another cycle, generating thereby an architecture in the constant process of becoming, the protean ruin. The latter is characterized by its continuous formal mutations on the one hand and by its flexible architectural programs on the other hand. Those formal and functional features are then repeatedly reassessed and reconfigured in response to one another. This initiates a succession of unexpected spaces and playful inhabitation whereby spaces, users and surroundings respond organically to one another and evolve accordingly in a fluid space-time continuum. Decay in architecture is therefore experienced as a positive and creative encounter.





#### 4. Ecology of the void

The relentless growth and decay of the protean ruin awakens the building-grower/user to the wider, complex environmental condition in the present moment. In consequence, the protean ruin unravels an ecology of architecture based on the void.

Current sustainable architecture often focuses on ecological materials or applies a posteriori a sustainable heating, ventilating or building system in response to environmental issues. In this research, that remedial architecture is replaced by an architecture relying on the void's immaterial and fluid dynamics to define its conceptual, structural and formal features. Indeed, the *Bank's Barometer*, *Sited Moss* and *Ruining a Ruin* no longer deal with the solid to provide an inert, subservient architecture that grants an instant response to functional or aesthetical requests. Their design incentive is laid behind what is not immediate or visible – the void – incorporating air, ambiance, humidity, light, heat, evaporation, condensation, convection and other intangible data and phenomena. Those impalpable parameters and subsequent interactions prompt the awakening of the building-grower/user who then adjusts his biorhythm to the circadian and seasonal rhythm of nature in order to live in harmony with his surroundings. This generates a creative and resourceful manner of inhabiting the space-time continuum in tune with the constant evolution of the environment. This argument was already insinuated by Gordon Matta-Clark, when he claimed that 'architecture is not completed once the drawings are made, but it has to be continuously created by those inhabiting its ambiguous space'.<sup>5</sup>

The ensuing architectural space can therefore be experienced in diverse manners following the nature of the interaction: topographically through various spatial sequences, bio-climatically through multiple energetic flows between projects and the ecosystem's other components, and biophysically through the continuous metamorphoses of its substance matter due to biotic exchanges within the project components. To these spatial experiences are then added the building-grower/user's memory and imagination that expand the current space into a wider historical and cultural context. The space is then experienced like Chinese traditional landscape paintings, both physically and mentally through time in endless combinations.

The practice of the void also contributes to ongoing architectural debates on ecology by advocating the void methodology to reach

sensible, resourceful and poetic solutions to current environmental issues. For instance, the EU Commission proposes solution for sustainable urban development by exchanging and debating ideas with local authorities that directly experience ecological issues but also with various intellectuals such as architects, anthropologists, artists and philosophers who bring a refreshing assessment to those matters.<sup>6</sup> This methodology relies thus both on a bottom-up approach and also on a cooperative, lateral and decentralized thinking that prompts a global effort to address issues on climate change.

In this context, architecture plays the role of a hyphen in-between the abstract, theoretical world of ecological policies and the practice of those schemes in daily life. In fact, it becomes an important means to implement those legal precepts into the urban landscape. This period of climatic disasters becomes then a creative challenge pushing architects to become more inventive, more receptive to other artistic, technological or scientific fields in order to propose a collective, innovative vision for ecological designs.<sup>7</sup> Respectively, those innovations should also be encouraged and developed in a legal frame that provides a necessary space of action for inspiring sustainable architecture. Nowadays, sustainable directives advocate the reckless usage of insulating materials or solar/wind systems by focusing solely on the energetic performance of a building. This led to a proliferation of localized solutions that disfigured the urban landscape whereas architects grew wary of the design prospect in sustainable architecture. Instead, the legal regulations should consider the whole life-cycle of those architectural materials/procedures and be oriented towards clear, global objectives that involve not only the building but also its impact on urban quality and the energetic efficiency of its neighbourhood, on the economy and social strategy of its borough, on local climate and biodiversity ... Concurrently, they should enable flexibility in the methodology used to reach those objectives by reducing the amount of specific or detailed requirements and allowing these requirements to be open to interpretation and discussion.

Furthermore, the ecology of the void doesn't only depend on the delivering but also on the receiving end of architecture. It requires a conscious and responsible engagement from the building-grower/user who tends to his building in a continuous and affectionate manner by knowingly accelerating or decelerating its decay through judicious use of spatial accidents and material erosion. His creative input reveals itself to be essential to the becoming process of the protean ruin.



Thus the sustainable architecture of the void generates a far-sighted ecology wholeheartedly empowered by people rather than by abstract criteria. This ecology is based on a rich transcultural and interdisciplinary network foundation and introduces all participants at an early stage in the design process of the building as well as in the elaboration process of the legal frame. In this respect, current climatic issues are dealt with in depth from various angles in the ultimate purpose of reuniting people once again with the oneness of the universe, enabling them thereby to attain the plenitude.

## 5. My hyphen-nation of the void

This thesis, and in particular *Ruining a Ruin*, can be perceived as a self-portrait or a testimony to my bicultural heritage. The hyphenation of the void appears thus as my hyphen-nation, a nation whose socio-cultural identity is distinguished not by its origin, but by its inexorable journey. As such, it develops in an unstable and unpredictable manner, difficult to grasp in its wholeness and as a whole. Yet, its customary permissiveness also constitutes the greatest source of inspiration, where all things accumulated along the road simmer and intermingle unreservedly. The hyphen-nation becomes a constant source of creativity, offering a new perspective on our surroundings and suggesting imaginative solutions to diverse current issues. It is in this mindset that I will relentlessly pursue this enthralling research into the realm of the hyphen-nation where I belong.



## List of Illustrations

Introduction

I.1	Charlie Paton, the <i>Seawater Greenhouse</i> (1992), Tenerife.
I.2	Exploration architects, <i>the Sahara Forest Project</i> (2008).
I.3	Philippe Rahm, <i>Domestic Astronomy</i> (2009), plan and section of the thermal zones of inhabitation.
I.4	Ibid., interior perspective.
I.5	Ibid., incandescent light bulbs providing both light and heat.
I.6	Philippe Rahm, <i>Mollier Houses</i> (2005), air ventilation/hygrometric section.
I.7	Ibid., view of the interior pool and bathroom.

I. Theory of the Void

1. The Hyphenation of the Oriental Void and Chinese Traditional Landscape Painting

V.1.1	Chinese symbol <i>Tai-chi Tu</i> or <i>Diagram of the Supreme Ultimate</i> with the three key principles of the void.
V.1.2	Dynamic within the full component in the <i>Diagram of the Supreme Ultimate</i> .
V.1.3	Taoist vertical and horizontal cosmologic movements.
V.1.4	Chinese timeline evolution.
V.1.5	Li Tang, <i>Wind through the pine valleys</i> (1124).
V.1.6	Xia Gui, <i>Pure and remote views of streams and mountains</i> (ca. 1200).
V.1.7	Li Cheng, <i>A solitary temple amid clearing peaks</i> (ca. 960).
V.1.8	Huang Gong Wang, <i>Stone cliff at the pond of Heaven</i> (1341).
V.1.9	Flowers, leaves and trees shaped by simple outlines.
V.1.10	Rocks rendered by texture made with repeated brushstrokes.
V.1.11	Shitao, <i>Plum branches in bloom</i> (17th century).

V.1.12	Dong Qichang, <i>The Quingbian mountains</i> (1617).
V.1.13	Shan Shui, Chinese ideograms standing for for moutain and water.
V.1.14	Shitao, <i>Painter-fisherman</i> (17th century).
V.1.15	Wang Shen, <i>Serried hills over a misty river</i> (ca. 1100).
V.1.16	Ni Zan, <i>Cabinet of the purple mushroom</i> (ca. 1370).
V.1.17	Shitao, <i>The waterfall of mount Lu</i> (17th century).
V.1.18	The raised distance.
V.1.19	The deep distance.
V.1.20	The flat distance.
V.1.21	Dong Qichang, <i>Wanluan cottage</i> (1597).
V.1.22	Zhao Mengfu, <i>Autumn colours on the Quiao and Hua mountains</i> (1296).
V.1.23	Wan Nian, <i>Qiao Bridge</i> (18th century).
V.1.24	Xu Yang, <i>Spring in the Capital</i> (1767).
V.1.25	Alexander Cozens, <i>Imaginary landscape of tree with distant mountains</i> (1785–86).
V.1.26	Attributed to Castiglione, <i>Shooting wild geese</i> (ca. 1750).

2. The Oriental Architecture of the Void

V.2.1	The symbiosis with nature of a <i>pyol-dang</i> , an annex to the men's quarter of a Korean traditional house.
V.2.2	The natural materials used in man-made construction blending with its surrounding nature.
V.2.3–4	Porosity of the rice paper doors and windows in Nakseonjae Estate, <i>Changdeokgung Palace</i> (15th century), Seoul.
V.2.5	Veranda in-between the garden and the Old <i>Shoin</i> or drawing room, <i>Katsura Imperial Villa</i> (17th century), Kyoto.
V.2.6	New Summer Palace pavilion gallery (renovated at the

- beginning of the 20th century), Beijing.
- V.2.7** Interior of Do-Ho Suh's parents' home in Seoul.
- V.2.8** Progressive sequence in the interior of the main building, the meditation hall or *hojo* in *Ryoan-ji Temple*, (15th century), Kyoto.
- V.2.9** Asymmetric composition in a *Hanoak*'s elevation.
- V.2.10** Asymmetric wall composition of the *Shokintei* tea room, *Katsura Imperial Villa* (17th century), Kyoto.
- V.2.11** *Ise Shrine*, old shrine on the left, new shrine on the right, south–west Hongshu.
- V.2.12** Boundless spatial perception in the Old *Shoin* or drawing room of the *Kastura Imperial Villa* (17th century), Kyoto.

### 3. The Occidental Void

- V.3.1** Evangelista Torricelli, vacuum experiment with mercury (1643).
- V.3.2** Sliding wall panels of the *Nanzen-ji Temple* (13th century), Kyoto.
- V.3.3** The rhythm of the sliding panels in the previous picture seems to be echoed in the curtain wall of Mies van der Rohe's *S.R. Crown Hall* (1956), Chicago.
- V.3.4** Mies van der Rohe, 1986 reconstruction of the *German Pavilion* (1929) in Barcelona. The open plan, flexibility and prefabrication of the pavilion recall the architectural layout of a Japanese traditional house. This image could for example be compared to the fluid spatial sequence of the *Katsura Imperial Palace* in the image V.2.12.

## II. Hyphens

### 1. The Moss

- H.1.1** Janet Marsh, *drawing of a clump of moss* (1979).
- H.1.2** Moss rhizoids' net structure.
- H.1.3** Male gametophore with antheridia.

- H.1.4** Female gametophore with archegonia.
- H.1.5** Haircap moss' sporangium with operculum.
- H.1.6** Detail of a peristome.
- H.1.7** Sphagnum clump gametophores.
- H.1.8** Moss mat in Japanese garden.
- H.1.9** *Grimmia Pulvinata*.
- H.1.10** Moss turf of *Schistidium antartici*.
- H.1.11–14** Several shots of a sphagnum moss leaf under a microscope.
- H.1.15** Sphagnum moss leaf clogged with diesel pollutants.
- H.1.16** Moss wads and moss rod used as caulking materials in wooden boat.
- H.1.17** Woven moss basket.
- H.1.18** Moss insulation behind white horizontal timber strips, Bravacovo.
- H.1.19** *Bryum Pseudotriquetrum* moss forming travertine.
- H.1.20** Calcite deposit on *Cratoneuron Commutatum* moss.
- H.1.21** Travertine's porous texture.
- H.1.22** *Nanzen-ji* rock garden, Kyoto.
- H.1.23–24** Wall-covering moss perceived either as a protection or a decaying process.

### 2. The Ruins

- H.2.1** *Hadrian Villa* (2nd century AD), Tivoli.
- H.2.2** Bernini, *The ruined bridge at the Palazzo Barberini* (1679), Rome.
- H.2.3** Piranesi, *Rovine del Sisto, o sia della gran sala delle terme Antoniniane, Veduta di Roma* (ca. 1766).
- H.2.4** Piranesi, *Veduta degli Avanzi di alcune Camere sepolcrali, essenti sull' antica Via Appia fuori di Porta S. Sebastiano, La Antichita Romane, v. II* (1756).



- H.2.5** Ruins of *Rievaulx Abbey* (12th century), Yorkshire.
- H.2.6** Ruins of *Pompeii* (79 AD).
- H.2.7** Charles-Louis Clérissseau, *Architectural Fantasy* (1782).
- H.2.8** Joseph M. Gandy, *View of the dome of Sir John Soane's museum, looking east* (1811).
- H.2.9** John Soane, extract from the 'Crude Hints towards a History of my House' (1812).
- H.2.10** Joseph M. Gandy, *Views of the Bank of England's Rotunda in ruin* (1798).
- H.2.11–12** Demolition of the Bank of England's Rotunda, *The Times*, (1 May 1925).
- H.2.13** Joseph M. Gandy, *A bird's eye view of the Bank of England* (1830).
- H.2.14** Albert Speer, the *Great Dome* model (1937), Berlin.
- H.2.15** Hans Dustmann, *Langemarckhalle* (1941), Berlin.
- H.2.16** Ibid., detail of the colonnade, Berlin.
- H.2.17** Robert Smithson, *Map of the Monuments of Passaic* (1967).
- H.2.18** Robert Smithson, *Monuments of Passaic; the Bridge Monument*.
- H.2.19** Ibid., *Monument with Pontoons*.
- H.2.20** Ibid., *The Fountain Monument*.
- H.2.21–22** The rapid demolition process of buildings.

### 3. The English Picturesque Landscape Garden

- H.3.1** Titian, *Bacchanal of the Andrians* (1523–24).
- H.3.2** Claude Lorrain, *Landscape with the marriage of Isaak and Rebekka* (1648).
- H.3.3** Salvator Rosa, *River landscape with Apollo and the Cumean Sibyl* (1655).
- H.3.4** William Kent, *Flower garden at Chiswick House* (1730).

- H.3.5** William Kent, *Stowe landscape gardens, the Temple of Ancient Virtue* (1734), Buckinghamshire.
- H.3.6** Lancelot Capability Brown, *Stowe landscape gardens, the Grecian Valley* (1715–45), Buckinghamshire.
- H.3.7** William Gilpin, the general idea of Keswick lake from the manuscript of his *Lakes Tour Notebook* (1772).
- H.3.8** Thomas Hearne, illustrations for Richard Payne Knight's *The Landscape: a Didactic Poem* (1794), a landscape in the style of Capability Brown.
- H.3.9** Ibid., the previous landscape in the picturesque style advocated by Knight.
- H.3.10–11** Humphry Repton, *View of the Tatton Park before and after Repton's landscaping* (1792), Cheshire.
- H.3.12–13** Humphry Repton, *View of the Hooton Park before and after Repton's landscaping* (1802), Cheshire.
- H.3.14** Matteo Ripa, *Morning Glow on the Western Ridge* (1714).
- H.3.15** Extract from a copy of the *Yuan Ming Yuan si shi jing tu yong*, *Illustrated Odes to the Forty Scenes of the Garden of Perfect Brightness*, dated from 1745 and commissioned by the emperor Qianlong.

### 4. The Chinese Garden

- H.4.1** *Ta Kuan Yuan*, *A Garden of Total Vision* (1930). An imaginary reconstruction of the garden in the Chinese novel *The Story of the Stone* or *Dream of the Red Chamber* by Cao Xuequin (ca. 1750).
- H.4.2** Visual busyness created by a pattern repetition in *Zhuozheng Yuan*, *The Humble Administrator's Garden* (16th century), Suzhou.
- H.4.3** Peacock feather motif pavement enhancing the visual busyness of the garden.
- H.4.4** Various patterns in *He Yuan*, *The He family Garden* (19th century), Yangzhou.

- H.4.5**     *Wangshi Yuan, The Master of the Nets' Garden* (10th–13th century), Suzhou.
- H.4.6**     *Gongshi* scholarstones.
- H.4.7**     Solitary *Taihu* rock in *Liuyuan, The Lingerin Garden* (16th century), Suzhou.
- H.4.8**     Mountain with lace-bark pine in *He Yuan, The He family Garden* (19th century), Yang zhou.
- H.4.9**     Shore type *Taihu* rockgarden in *Shih Tzu Lin, The Stone Lion Grove* (14th century), Suzhou.
- H.4.10**    Monochromatic palette of the rockgarden in *Liuyuan, The Lingerin Garden* (16th century), Suzhou.
- H.4.11**    *Zhuozheng Yuan, The Humble Administrator's Garden* (16th century), Suzhou.
- H.4.12**    Courtyard cells of *Yuan Ming Yuan, The Garden of Perfect Brightness* (18th–19th century), Beijing.
- H.4.13**    Huang Gongwang, detail of *Dwelling in the Fuchun Mountains* (1347–50).

## 5. Alexander Pope’s Grotto

- H.5.1**     Augustin Heckel, *View of Pope’s villa at Twickenham* (1749).
- H.5.2**     Site plan of Pope's villa and garden in relation to the road and river, ca. 1725.
- H.5.3**     Plan of grotto and subterranean way ca. 1725, based on Pope's drawings.
- H.5.4**     Drawing attributed to William Kent, showing Pope in his grotto (ca. 1730–40).
- H.5.5**     Alexander Pope, plan of the grotto (ca. 1740).
- H.5.6**     John Serle, plan of the grotto (1745).
- H.5.7**     Samuel Lewis, plan of the grotto (1785).
- H.5.8**     Samuel Lewis, Pope's grotto (1786).

- H.5.9**     View of Pope's grotto and subterranean way in November 2008.

## III. Practice of the Void

### 1. The Bank’s Barometer

- P.1.1–2**    The *Vesta Temple* (80 BC) at *Hadrian’s villa*, Tivoli.
- P.1.3–4**    Section–elevation, plan of the *Vesta Temple*.
- P.1.5**     John Soane, *Tivoli Corner of the Bank of England* (1807).
- P.1.6**     Three spatial manipulations using the same number of pictures rearranged according to, respectively, the continuity of the floor, wall and ceiling's oculus.
- P.1.7**     ‘More petrol price rises on way’ written by Ashley Seager in *The Guardian*, (5 May 2004).
- P.1.8**     ‘An oily problem’ written by Joe Thomas in *Investors’ Chronicle*, (7 May 2004).
- P.1.9**     Extract from ‘Oil soars despite overproduction’ on the BBC website , (5 May 2004).
- P.1.10**    LAQN pollutant monitoring device located at the Senator House collecting data on nitrogen oxides, ozone and sulphur dioxide.
- P.1.11**    Weather data, graphs and figures for February 2004, provided on [www.weather.herald.com](http://www.weather.herald.com)
- P.1.12**    (from top left to bottom right) The wind pattern map, the regular weather map and the aviation weather map have uncanny visual similarities to wet moss, moss patches and fields. These in turn are reminiscent of satellite weather maps, temperature and precipitation maps. Despite their different scales, weather maps covering the whole of Europe look like a fractal part of small moss patches or like a diagram detailing moss's biological properties.
- P.1.13**    Trailing the spatial manipulation of Tivoli Corner from open to closed panoramas.

- P.1.13a** The spatial manipulation's trailing, detail.
- P.1.14** The moss forecast of Tivoli Corner for February 2004.
- P.1.15** The moss forecast of Tivoli Corner for May 2004.
- P.1.14a** The moss forecast of Tivoli Corner for February 2004, detail.
- P.1.15a** The moss forecast of Tivoli Corner for May 2004, detail.
- P.1.16** The clearly visible architectural outlines of Tivoli Corner indicate a regular situation at the Bank of England in February 2004.
- P.1.17** Graph showing the evolution of the NO<sub>x</sub> pollution level along with the price of the crude oil barrel since the beginning of the year 2004.
- P.1.18** The pressure felt inside the Bank is reflected in Tivoli Corner by a high level of humidity and fogginess that make the Tivoli Corner's architectural outlines disappear.
- P.1.19** Graph showing the evolution of the NO<sub>x</sub> pollution level along with the price of the crude oil barrel from January to May 2004, when the price of the oil barrel hits its highest point.
- P.1.20** LAQN's statistic for the concentration of nitrogen oxides (NO<sub>x</sub>) around Senate House for the period extending from 1 January to 1 May 2004.
- P.1.21** Platts/Comstock's graph showing the evolution of the price for the crude oil barrel (5 May 2004).

## 2. Sited Moss: Invading or Fading Architecture?

- P.2.1** William Wilkins, *The Wilkins Portico* (1827), University College London, London.
- P.2.2** Users oblivious to the Portico's interior space.
- P.2.3** Dried sphagnum moss covering surface scratches.
- P.2.3a** Dried moss sheets towards the back wall of the Portico.
- P.2.3b** Dried moss trailing a path left by the bin's displacement.
- P.2.4** Bun-cushion moss covering deep puncture damages.

- P.2.4a-b** Bun-cushion moss along the colonnade.
- P.2.5** Green fern moss covering broken joints in-between stone pavements.
- P.2.5a-b** Green fern moss covering the water channels of the Portico's floor.
- P.2.5c** Zone of humidity around a column.
- P.2.5d** Moss around the chair's legs suggesting an abandoned chair and hinting thereby to the passing time.
- P.2.6** View towards the south corner of the Portico.
- P.2.7-9** Visual disruption of the pavement due to the presence of moss.
- P.2.10** View towards the north corner of the Portico.
- P.2.11** View along the colonnade of the Portico.
- P.2.12** Interactive motion-sound equipment.
- P.2.13** View of the Portico's floor the day after the presentation.
- P.2.14** The Portico's plan drawn according to measures taken on site, layered with the cartographic background of the Portico's floor pavement.
- P.2.15** The intervention plan of the installation describing the moss mapping and the location of the sound system.
- P.2.16** Interiorization plan of the installation *Sited Moss: Invading or Fading Architecture?*
- P.2.16a** Interiorization plan, detail-1.
- P.2.16b** Interiorization plan, detail-2.
- P.2.16c** Interiorization plan, detail-3.

## 3. Ruining a Ruin

- P.3.1** Map showing the site in relation to Brussels' city centre and its European Quarter. The upper picture shows the east corner of the Committee of the Regions in a view from Rue Belliard looking towards Brussels' city centre. The lower right picture



	shows a view from Rue Belliard, looking west towards the Belliard Tunnel.		
P.3.2	Urban grain dismantled by large EU corporate buildings.	P.3.32	Anna Garforth and her mossenger <i>Sporeborne</i> (2008).
P.3.3	East–West access/exit arteries to/from Brussels' city centre.	P.3.33–35	Variation on peat pot modules that could be filled with the other experimented materials.
P.3.4	Main parks around the site.	P.3.36	Rhino computer models of a variety of peat pot modules.
P.3.5	Plan of Brussels' ground permeability in 2006.	P.3.37	Paper pulp egg tray rigidified with plaster to simulate its calcification process.
P.3.6	Site plan with various EU institutions in the European Quarter.	P.3.38	Roots growing into a tight mesh affecting in the long run the morphology of the place.
P.3.7	Antonio Joly, <i>A capriccio of Chinese landscape</i> (1744-48).	P.3.39	Lithification experiment with liquid plaster and open-cell foam.
P.3.8–9	Yukitsuri rope system assisting trees holding their shape during snowy winters in the <i>Kenrokuen</i> garden (17th century), Ishikawa.	P.3.40	Lithification experiment with peat pot.
P.3.10–12	Moss and algae covered by calcareous film.	P.3.41	Lithification of compressed cellulose sponge.
P.3.13–14	Small water fountain slowly being petrified into travertine.	P.3.42	Lithification of sphagnum moss.
P.3.15–16	Fractal quality of the travertine formation.	P.3.43	Patrick Blanc, living wall of <i>BHV Homme</i> (2007), Paris.
P.3.16–17	Travertine's geomorphology forming horizontal pool terraces or vertical mounds depending on the speed of the water flow.	P.3.44	EDAW architects, the <i>London Wesfield Shopping Centre's</i> southern terrace wall (2008) using pregrown modular panels Easy Green System developed by Elevated Landscape Technologies (ELT). Installation diagram for living walls made of modular panels.
P.3.18	Experiment with growing basil seeds in six different alveolar materials.	P.3.45	Vertical Green Company, Fytowall, biodegradable panels.
P.3.19	Three week-old basil sprouts.	P.3.46	Galvanized metal mesh box filled with sphagnum moss and polypropylene plastic mesh box filled with soil substrate.
P.3.20–24	Pictures taken at regular intervals over a period of six weeks, showing the samples' evolution up to their final desiccated state.	P.3.47	Medicago Sativa at various stages of growth.
P.3.25	Open-cell foam.	P.3.48	Trifolium Subterraneum and the various degrees of its leave's chlorosis and laceration.
P.3.26	Dried and wet compressed cellulose sponge.	P.3.49	Taraxacum Officinale web and Cichorium Intybus L.
P.3.27	Dried and wet peat pellet.	P.3.50	Ipomoea Violacea and the colour variation of its flower at six hours interval.
P.3.28	Floral foam.	P.3.51	Nicotiana Tabacum and its leaf's necroses, intact and attacked stomata under microscope.
P.3.29	Sphagnum moss.	P.3.52	Phalaris Arundinacea.
P.3.30	Peat pots pierced by young roots.	P.3.53	Sphagnum moss.
P.3.31	Compacted soil blocks kept in shape by a mesh of six week-old basil roots.		

<b>P.3.54</b>	Aulacomnium Androgynum and Grimmia Pulvinata.	<b>P.3.79</b>	South-east corner of the monoblock visible from the CoR's courtyard.
<b>P.3.55</b>	Hypnum Cupressiforme and Pleurozium Schreberi.	<b>P.3.80</b>	Hand drawn study of the monoblock's growing principle and its connections with the CoR's building.
<b>P.3.56</b>	Cratoneuron Commutatum.	<b>P.3.81</b>	Hand drawn study of diverse textures applied on the overall volume of the monoblock.
<b>P.3.57</b>	Bryum Pseudotriquetrum.	<b>P.3.82</b>	Hand drawn section describing spatial study with the distribution, expansion/contraction and connection of the monoblock's various chamber cells.
<b>P.3.58</b>	Aeshna Grandis.	<b>P.3.83</b>	Hand drawn section portraying diverse textures and materials found in the garden monolith.
<b>P.3.59</b>	Meta Menardi.	<b>P.3.84–85</b>	Working Rhino computer model of the garden monoblock's connections with the adjacent CoR's building.
<b>P.3.60</b>	Inachis Io.	<b>P.3.86</b>	Hand drawn monoblock's volumes following the computer model's metric and sectional adjustments.
<b>P.3.61–62</b>	Euphydryas Aurinia.	<b>P.3.87</b>	Hand drawn section studying the chamber cells' organization of the garden monoblock following the computer model's metric and sectional adjustments.
<b>P.3.63</b>	Lasioglossum Malachurum,	<b>P.3.88</b>	Hand drawn section studying the materials' lithification of the garden monolith following the computer model's metric and sectional adjustments.
<b>P.3.64</b>	Passer Domesticus.	<b>P.3.89</b>	Syntactic layer defining the internal circulation, external connections and structural morphology of the project.
<b>P.3.65</b>	Pica Pica.	<b>P.3.90–91</b>	Topographic layer showing the section's morphologic and topographic decay through time.
<b>P.3.66</b>	Turdus Merula.	<b>P.3.92</b>	Climatic layer emphasizing the expansion/contraction of the garden monoblock under the climatic influence.
<b>P.3.67</b>	Giant kites.	<b>P.3.93</b>	Mechanic layer illustrating the position and interaction of weathering instruments within the project.
<b>P.3.68</b>	Water condensers in dry, wet and soaked states.	<b>P.3.94</b>	Superposition of all the previous layers in order to epitomize the ruining principle of the section.
<b>P.3.69</b>	Flying bridge, connected to giant kites and water condensers.	<b>P.3.95</b>	Ruinous section of the garden monolith following the combined effects of all the previous layers.
<b>P.3.70</b>	Tending fans and panoply of alternative gardening tool heads.		
<b>P.3.71</b>	Articulated arms and their arm unit.		
<b>P.3.72</b>	Rain calabashes.		
<b>P.3.73</b>	Wind turbine.		
<b>P.3.74</b>	Water wheels and their wing pocket units.		
<b>P.3.75</b>	Water sprinklers and their wing pocket unit.		
<b>P.3.76</b>	Working Rhino computer model, top view into the core of the monoblock.		
<b>P.3.77</b>	North-west corner of the monoblock visible from rue Belliard.		
<b>P.3.78</b>	South-west corner of the monoblock visible from rue du remorqueur.		

- P.3.96** Diagrammatic series of the long/cross section and plan of the final monoblock.
- P.3.97** Monoblock's texture.
- P.3.98** Monolith's calcified texture.
- P.3.99** Mulberry paper texture.
- P.3.100** *Ruining a Ruin's interaction dynamics* panel accompanied by the diagram of the biophysical and energetic exchanges between the main components of the project.
- P.3.100a** *Ruining a Ruin's interaction dynamics*, detail-1.
- P.3.100b** *Ruining a Ruin's interaction dynamics*, detail-2.
- P.3.101** *Ruining a Ruin in the process of becoming* panel with the material aging register showing over the centuries the fluctuation of the volume percentage for each material component.
- P.3.101a** *Ruining a Ruin in the process of becoming*, detail-1.
- P.3.101b** *Ruining a Ruin in the process of becoming*, detail-2.
- P.3.102** *Ruining a Ruin's water chart* panel with the annual weather records for Brussels, comprising of the average rainfall (mm), the min-max air temperature(C°) and the am/pm relative humidity (%).
- P.3.102a** *Ruining a Ruin's water chart*, detail-1.
- P.3.102b** *Ruining a Ruin's water chart*, detail-2.
- P.3.103** Roof plan of the monoblock to be viewed along the *Ruining a Ruin's interaction dynamics* panel.
- P.3.104** Roof plan of the garden monolith to be viewed with the *Ruining a Ruin in the process of becoming* panel.
- P.3.105** *Ruining a Ruin's section 1:100*, year 2500.
- P.3.105a** *Ruining a Ruin's section 1:100*, detail-1.
- P.3.105b** *Ruining a Ruin's section 1:100*, detail-2.
- P.3.105c** *Ruining a Ruin's section 1:100*, detail-3.
- P.3.106** *Ruining a Ruin's section 1:20*, zoom into the previous section, in a time period of 100 months after the first drawing.
- P.3.106a** *Ruining a Ruin's section 1:20*, detail-1.
- P.3.106b** *Ruining a Ruin's section 1:20*, detail-2.
- P.3.106c** *Ruining a Ruin's section 1:20*, detail-3.
- P.3.107** *Ruining a Ruin's section 1:4*, in a time period of 100 days after the previous drawing.
- P.3.107a** *Ruining a Ruin's section 1:4*, detail-1.
- P.3.107b** *Ruining a Ruin's section 1:4*, detail-2.
- P.3.107c** *Ruining a Ruin's section 1:4*, detail-3.
- P.3.108** *Ruining a Ruin's section 1:1*, in a time period of 100 hours after the previous drawing.
- P.3.108a** *Ruining a Ruin's section 1:1*, detail-1.
- P.3.108b** *Ruining a Ruin's section 1:1*, detail-2.
- P.3.108c** *Ruining a Ruin's section 1:1*, detail-3.
- P.3.109** *Inventory of weathering instruments* panel.
- P.3.110** *Ruining a Ruin's biotope chart* panel giving an overview of the material composition and the biodiversity found in the garden monoblock.
- P.3.111** *Tending almanach* panel.
- P.3.112** *Evolving landscape Rubens' clouds*.
- P.3.113** Video handscrolls evoking life within the bacterial monolith under the microscope.





## Bibliography

- Abramson, Daniel Michael. *Money's Architecture: The Building of the Bank of England, 1731–1833*. Cambridge, Mass.: Harvard University Press, 1993.
- Aikin, John. *Letters from a Father to his Son*. London: J. Johnson, 1796.
- Armleder, John, Copeland, Mathieu, Le Bon, Laurent, Metzger, Gustav, Perret, Mai-Thu, Phillpot, Clive and Pirotte, Philippe (eds). *Vides, une Rétrospective*. Exhibition Catalogue. Paris, Zurich: Editions du Centre Pompidou, JRP/Ringier Kunstverlag, 2009.
- Attiret, Jean-Denis. 'Lettre à M. d'Assaut, 1er Novembre 1743'. *Lettres édifiantes et curieuses écrites des missions étrangères par quelques missionnaires de la compagnie de Jésus*, 27:1–61. Paris: Guérin, 1749.
- Attlee, James and Lefevre, Lisa. *Gordon Matta-Clark: The Space Between*. New York: Nazraeli Press, 2003.
- Baas, Jacquelynn. *Smile of the Buddha, Eastern Philosophy and Western Art, From Monet to Today*. Berkeley, Calif.: University of California Press, 2005.
- Bachelet, Bernard. *L'espace*. Paris: Presses Universitaires de France, 1998.
- Ballantyne, Andrew. *Architecture, Landscape and Liberty: Richard Payne Knight and the Picturesque*. Cambridge: Cambridge University Press, 1997.
- Beckles Willson, Anthony. *Alexander Pope's grotto in Twickenham*. Twickenham: Garden History Society, Twickenham Museum, 1998.
- Beckles Willson, Anthony. *Mastiffs and Minerals in the life of Alexander Pope, a Study in two parts*. Twickenham: Twickenham Museum, 2005.
- Bergdoll, Barry and Oechslin, Werner (eds). *Fragments: Architecture and the Unfinished, Essays presented to Robin Middleton*. London: Thames and Hudson, 2006.
- Berque, Augustin. *Le sauvage et l'artifice, les Japonais devant la Nature*. Paris: Ed. Gallimard, 1986.
- Bomin, Wang. *Zhongguo Huihua Shi (History of Chinese Painting)*. Shanghai: Shanghai people's fine art publishing house, 1982.
- Boyd, Andrew. *Chinese Architecture and Town Planning 1500BC–AD1911*. London: Alec Tiranti, 1962.
- Brownell, Morris R. (ed.). *Alexander Pope's Villa, Marble Hill House*. Exhibition catalogue. London: Greater London Council, 1980.
- Buci-Glucksman, Christine. *Esthétique de l'éphémère*. Paris: Ed. Galilée, 2003.
- Buci-Glucksman, Christine. *L'esthétique du temps au Japon, Du zen au virtuel*. Paris: Ed. Galilée, 2001.
- Büdel, Julius. *Climatic geomorphology*. Trans. Lenore Fischer and Detlef Busche. Princeton, New Jersey: Princeton University Press, 1982.
- Bussagli, Mario. *History of World Architecture, Oriental architecture /2: China, Korea, Japan*. Milan: Faber/Electa, 1981.
- Capon, Edmund and Xiejun, Chen (eds). *Fantastic Mountains, Chinese Landscape Painting from the Shanghai Museum*. Exhibition catalogue. Sydney: Art Gallery New South Wales, 2000.
- Capra, Fritjof. *The Tao of Physics: An Exploration of the Parallels between Modern Physics and Eastern Mysticism*, 4th edn. Boston, Mass.: Shambhala, 2000.
- Chambers, William. *A Dissertation on Oriental Gardening (1772)*. Farnborough: Gregg International Publishers, 1972.
- Chang, Ching-Yu. 'Japanese Spatial Conception-1, Introduction'. *Japan Architect*, no. 8404, 1984.
- Chang, Chin-Yu. 'Japanese Spatial Conception-1, Language as a means of spatial expression'. *Japan Architect*, no. 8405, 1984.
- Chang, Chin-Yu. 'Japanese Spatial Conception-4, Religious and philosophic influences on Japanese space-2'. *Japan Architect*, no. 8407, 1984.
- Chang, Ching-Yu. 'Japanese Spatial Conception-6, Synthesis of architectural space, From the part to the whole'. *Japan Architect*, no. 8409, 1984.
- Chang, Ching-Yu. 'Japanese Spatial Conception-8, Practicing professionals'. *Japan Architect*, no. 8411/12, 1984.
- Chang, Amos Ih Tiao. *The Tao of Architecture*. Princeton, New Jersey: Princeton University Press, 1956.
- Cheng, Anne. *Histoire de la pensée Chinoise*. Paris: Seuil, 1997.
- Cheng, François. *Vide et Plein, Le langage pictural chinois*. Paris: Ed. du Seuil, 1991.



- Cheng, François (ed.). *Souffle-Esprit: Textes théoriques chinois sur l'art pictural*. Paris: Ed. du Seuil, 1989.
- Cheng, Ji. *Yuan Yeh or The Craft of Gardens*. Trans. Alison Hardie, with a foreword by Maggie Keswick. New Haven: Yale University Press, 1988.
- Choi, Jae-Soon, Chun, Jin Hee, Hong, Hyung-Ock, Kang, Soon Joo, Kim, Dae Nyun, Min, Chan Hong, Oh, Hye Kyung and Park, Young Soon (eds). *Hanoak, Traditional Korean Homes*. Trans. Maija Rhee Devine. Seoul: Hollym International Group, 1999.
- Clark, Kenneth. *Landscape into Art*. London: John Murray Publishers, 1950.
- Clarke, J. J. *The Tao of the West*. London: Routledge, 2000.
- Cohen, Olivia-Jeanne. *Comme un sublime esquif ... Essai sur la danse contemporaine*. Paris: Ed. Séguier Archimbaud, 2002.
- Confucius. *The Analects*. Trans. Arthur Waley. New York: Alfred A. Knopf Inc, 2000.
- Corrin, Lisa G. and Kwon, Miwon. *Do-Ho Suh*. Exhibition catalogue. London: Serpentine Gallery, 2002.
- Craig, Edward (ed.). *Routledge Encyclopedia of Philosophy*. New York: Routledge, 1998.
- Dal Co, Francesco and Polano, Sergio. 'Un interview avec Albert Speer'. *Oppositions* 12, 1978, pp. 41–52.
- de Beistegui, Miguel. *The New Heidegger*. London: Continuum International Publishing Group, 2005.
- de Certeau, Michel, Giard, Luce and Mayol, Pierre. *L'invention du quotidien 2, habiter cuisiner*. Paris: Ed. Gallimard, 1994.
- Delbeke, Maarten, De Meyer, Dirk, Rogiers, Bas and Verschaffel, Bart (eds). *Piranesi, De prentencollectie van de Universiteit Gent*. Exhibition catalogue. Gent: Museum voor Schone Kunsten Gent and A&S/books, 2008.
- Didi-Huberman, Georges. *Génie du non-lieu: air, poussière, empreinte, hantise*. Paris: Ed. de Minuit, 2001.
- Dixon Hunt, John. *Gardens and the Picturesque: Studies in the history of landscape architecture*. Cambridge, Mass.: MIT Press, 1992.
- Dixon Hunt, John. *The Picturesque Garden in Europe*. London: Thames & Hudson, 2002.
- Dixon Hunt, John and Willis, Peter (eds). *The Genius of the Place*. Cambridge, Mass.: MIT Press, 1988.
- Drexler, Arthur. *The Architecture of Japan*. New York: Museum of Modern Art, 1955.
- Duhem, Pierre. *Medieval Cosmology: Theories of Infinity, Place, Time, Void, and the Plurality of Worlds*. Ed. and trans. Roger Ariew. Chicago, Ill.: University of Chicago Press, 1985.
- Dunnett, Nigel and Kingsbury, Noel. *Planting Green Roofs and Living Walls, revised and updated edition*. Portland/London: Timber Press, 2008.
- Earle, Joe (ed.). *Infinite Spaces, The Art and Wisdom of the Japanese Garden*. London: Autumn Press, 2000.
- Epoch Group. 'Commentary on the Communist Party – Part 6, On How the Chinese Communist Party Destroyed Traditional Culture'. The Epoch Times, 2004. [www.theepochtimes.com/news/4-12-20/25087.html](http://www.theepochtimes.com/news/4-12-20/25087.html).
- Epoch Group. *Nine Commentaries on the Communist Party*. Broad Press Inc, 2005.
- Feng, Gia-Fu and English, Jane. *Lao Tzu, Tao Te Ching: A new translation*. New York: Vintage Books Edition, 1972.
- Flam, Jack D. (ed.). *Robert Smithson: the Collected Writings*. Berkeley and Los Angeles: University of California Press, 1996.
- Forty, Adrian and Kuchler, Susanne (eds). *The Art of Forgetting*. Oxford: Berg Publishers, 1999.
- Fraser, Iain and Henmi, Rod. *Envisioning Architecture: An analysis of Drawing*. New York: John Wiley & Sons Inc., 1994.
- Gilpin, William. *Remarks on Forest Scenery and Other Woodland Views, Relative Chiefly to Picturesque Beauty*. London: Printed for R. Blamire, 1791.
- Ginsberg, Robert. *The Aesthetics of Ruins*. Amsterdam/New York: Rodopi, 2004.
- Goldschmidt, Victor. *Le système stoïcien et l'idée du temps*. Paris: Vrin, 1985.
- Gropius, Walter. *Architettura in Giappone*. Milan: Gorlich, 1960.
- Group of Policy Advisers (GOPA). 'Brussels, Capital of Europe, Final Report'. Brussels, 2001.

- Grynstejn, Madeleine, Birnbaum, Daniel and Speaks, Michael. *Olafur Eliasson*. London: Phaidon Press Ltd, 2002.
- Hagishima, Tanimoto and Takao. *Engineering Sciences Reports*, vol. 24, no. 3. Kyushu University, 2002, pp. 297–303.
- Hay, John (ed.). *Boundaries in China*. London: Reaktion Books Ltd, 1994.
- Heidegger, Martin. *Remarques sur art–sculpture–espace*. Ed. Hermann Heidegger. Trans. Didier Franck. Paris: Payot & Rivages, 2009.
- Heidegger, Martin. *Poetry, Language, Thought*. Trans. A. Hofstadter. New York: Harper & Row, 1971.
- Herzog & de Meuron. *Natural History*. Ed. Philip Ursprung. Montreal and Baden: Canadian Centre for Architecture and Lars Muller Publishers, 2002.
- Hirschfeld, C.C.L. *Theorie der Gartenkunst*, vol. 1. Leipzig: M.G. Weidmanns Erben und Reich, 1779.
- Holt, Nancy (ed.). *The Writings of Robert Smithson: Essays with Illustration*. New York: New York University Press, 1979.
- Holt Monk, Samuel (ed.). *Five Miscellaneous Essays by Sir William Temple*. Ann Arbor, Mich.: University of Michigan Press, 1963.
- Home, Henry. *Elements of Criticism*. Edinburgh: A. Millar and others, 1762; reprinted Hildesheim & New York: George Olms, 1970.
- Hussey, Christopher. *The Picturesque: Studies in a Point of View*. London: Frank Cass & Co. Ltd, 1983.
- Isozaki, Arata and Matsuoka, Seigow. MA: *Space-Time in Japan*. Exhibition catalogue. New York: Cooper-Hewitt Museum, 1979.
- Isozaki, Arata and Tadashi Oshima, Ken (eds). *Arata Isozaki*. London: Phaidon Press, 2009.
- Ito, Toyo. 'La Villa G – Mort d'une maison'. *Architecture d'Aujourd'hui*, no. 316, 1998.
- Jackson, Anna and Jaffer, Amin (eds). *Encounters: The Meeting of Asia and Europe 1500–1800*. Exhibition catalogue. Ed. . London: V&A Publications, 2004.
- Jammer, Max. *Concepts of Space, The History of Theories of Space in Physics*, 2nd edn. Cambridge, Mass.: Harvard University Press, 1970.
- Janovitz, Anne. *England's Ruins: Poetic Purpose and the National Landscape*. Oxford: Blackwell Publishers, 1990.
- Jencks, Charles and Kropf, Karl (eds). *Theories and Manifestoes of Contemporary Architecture*. London: Wiley-Academy, 2004.
- Jones, Barbara. *Follies and Grottoes*, 2nd edn. London: Constable and Company Ltd, 1974.
- *Journal of Chinese Philosophy*, Volume 11, Issue 4. Honolulu, Hawaii: Dialogue Publishing Company, 1984, pp. 353–374.
- Jullien, Francois. *Le detour et l'accès: Stratégies du sens en Chine, en Grèce*. Paris: Ed. Grasset & Fasquelle, 1995.
- Jullien, Francois. *Eloge de la Fadeur: A partir de la pensée et de l'esthétique de la Chine*. Paris: Editions Philippe Picquier, 1991.
- Kent, Rachel (ed.). *Lee Bul*. Exhibition catalogue. Sydney: Museum of Contemporary Art, 2005.
- Keswick, Maggie. *The Chinese Garden: History, Art and Architecture*. London/New York: Academy Ed./St Martin's Press, 1986.
- Keyworth, John. *Sir John Soane, Architect & Surveyor to the Bank of England*. Exhibition catalogue. London: Gemini Press, 2004.
- Kundera, Milan. *L'insoutenable légèreté de l'être*. Trans. François Kerel and François Ricard. Paris: Ed. Gallimard, 1984.
- Kunstmuseum Wolfsburg (ed.). *Japan and the West, the Filled Void*. Wolfsburg: KunstmuseumWolfsburg, 2007.
- Lao-Tzu. *Dao De Jing: Le Livre de la voie et de la vertu*. Trans. Claude Larre. Paris: Desclée de Brouwer, 1977.
- Lao-Tzu. *Tao Te Ching*. Trans. D.C. Lau. Harmondsworth: Penguin Books, 1963.
- Lao-Tzu. *Tao Te Ching*. Trans. R. Wilhelm and H. G. Ostwald. London: Penguin Arkana, 1989.
- Lee, Thomas H.C. (ed.). *China and Europe: Images and Influence in Sixteenth to Eighteenth Centuries*. Hong Kong: Chinese University Press, 1991.
- Leenhardt, Jacques and Lambertini, Anna (eds). *Vertical Gardens*. London: Verba Volant, 2007.
- Lusignan, Bruce and Kelly, John (eds). *Global weather prediction: the*

- coming revolution. New York and London: Holt, Rinehart & Winston, 1970.
- Maalouf, Amin. *Les Identités meurtrières*. Paris: Ed. Grasset & Fasquelle, 1998.
  - Macarthur, John. *The picturesque, architecture disgust and other irregularities*. London: Routledge, 2007.
  - Macaulay, Rose. *Pleasure of Ruins*. London: Weidenfeld and Nicolson, 1953.
  - Malenfer Ortiz, Valerie. *Dreaming the southern song landscape: the power of illusion in Chinese painting*. Leiden: Koninklijke Brill NV, 1999.
  - Masuda, Tomoya. *Japon*. Trans. P. and S. Rambach, assisted by L. Gaignebet. Fribourg: Office du Livre, 1969.
  - McHarg, Ian. *Design with Nature*. New York: John Wiley & Sons Inc., 1992.
  - McMillan Browse, Philip. *The RHS Encyclopedia of Practical Gardening, Plant Propagation*. London: Octopus Publishing Group Ltd, 1999.
  - Meyer, Laure. *Masters of English Landscape*. Paris: Finest S.A./Ed Pierre Terrail, 1992.
  - Miyoshi, Masao. *Trespasses*. Ed. Eric Cazdyn. Durham and London: Duke University Press, 2010.
  - Morel, Philippe. *Les grottes maniéristes en Italie au XVIe siècle*. Paris: Ed Macula, 1998.
  - Morris Reynolds, Ann. *Robert Smithson: Learning from New Jersey and Elsewhere*. Cambridge, Mass.: MIT Press, 2004.
  - Mostafavi, Mohsen and Leatherbarrow, David. *On weathering: the life of buildings in time*. Cambridge, Mass.: MIT Press, 1993.
  - Mostafavi, Mohsen and Najle, Ciro (eds). *Landscape urbanism: a manual for the machinic landscape*. London: AA Publications, 2003.
  - Murray, Ciaran. 'Shawaradgi Resolved'. *Garden History* 26:2, 1988.
  - MUSAC (ed.). *Julie Mehretu*. Exhibition catalogue. León, Castilla: MUSAC and Hatje Cantz, 2006.
  - Nemitz, Barbara. *Transplant: Living vegetation in contemporary Art*. Ostfildern-Ruit: Hatje Cantz Publishers, 2000.
  - Norberg-Schulz, Christian. *Kahn, Heidegger et le langage de l'architecture*. Ed. and trans. Xavier de Coster. Brussels: Institut Supérieur d'Architecture Saint-Luc, 1994.
  - OBRA Architects. 'Speculations', written as an introduction to *OBRA ARCHITECTS Monograph*. AADCU Book Series of Contemporary Architects Studio Report in the United States. Beijing: China Architecture & Building Press, 2005. [www.obraarchitects.com/writing](http://www.obraarchitects.com/writing)
  - Olof Larsson, Lars. *Albert Speer, Le plan de Berlin 1937–1943*. Trans. Beatrice Loyer. Brussels : Archives d'Architecture Moderne, 1983.
  - OMA@work. *Tokyo: Architecture and Urbanism*. May Special Issue, 2000.
  - Oppé, Adolf Paul. *Alexander and John Robert Cozens*. Cambridge, Mass.: Harvard University Press, 1954.
  - Palmer, Joy A. (ed.). *Fifty Key Thinkers on the Environment*. New York: Routledge, 2001.
  - Parkes, Graham (ed.). *Heidegger and Asian Thought*. Honolulu, Hawaii: University of Hawaii Press, 1990.
  - Pascal, Blaise. *Pensées* 72, 1670, ebook [www.gutenberg.org/files/18269/18269-h/18269-h.htm#FNanchor\\_32\\_36](http://www.gutenberg.org/files/18269/18269-h/18269-h.htm#FNanchor_32_36)
  - Payne Knight, Richard. *An analytical inquiry into the principles of taste*. London: Printed for T. Payne and J. White, 1805.
  - Péré-Christin, Evelyne. *L'escalier, Métamorphoses architecturales*. Paris: Ed. Alternatives, 2001.
  - Pérec, Georges. *Espèces d'espaces*. Paris: Ed. Galilée, 1974.
  - Perez de Arce, Rodrigo. *Urban transformation*. London: AA Publications, 1980.
  - Pluot, Sébastien. *James Turrell*. Paris : Ed. Images Modernes and Almine Rech Editions, 1999.
  - Pryn, Jonathan. 'Record Petrol Prices', *The Evening Standard*, 13 May 2004.
  - Rahim, Ali. *Catalytic Formations: Architecture and Digital Design*. London and New York: Taylor and Francis Group, 2006.
  - Rahm, Philippe. *Architecture Météorologique*. Paris: Archibooks+Sautereau Ed., 2009.
  - Reed, Marcia and Demattè, Paola (eds). *China on Paper: European and Chinese Works from the Late Sixteenth to Early Nineteenth Century*. Exhibition catalogue. Los Angeles, Calif.: Getty Research Institute, 2007.



- Reinhard, May. *Heidegger's Hidden Sources: East-Asian Influences on his work*. Ed. and trans. Graham Parkes. London: Routledge, 1996.
- Reischauer, August Karl. *Studies in Japanese Buddhism*. New York: The Macmillan Company, 1917.
- Reynolds, Joshua. *Seven Discourses delivered in the Royal Academy by the President*. London: Printed for T. Cadell, 1778.
- Richardson, D.H.S. *The Biology of Mosses*. Oxford: Blackwell Scientific Publications, 1981.
- Richardson, Margaret. 'John Soane and the Temple of Vesta at Tivoli'. *Journal of the Society of Architectural Historians of Great Britain*, vol. 46, 2003, pp. 127–146.
- Richardson, Margaret (ed.) *Visions of Ruin: Architectural fantasies & designs for garden follies, with Crude Hints Towards a History of my House*. Exhibition catalogue. London: Sir John Soane's Museum, 1999.
- Riegl, Alois. 'Le culte moderne des monuments. Son essence et sa genèse'. Trans. W. Forster and D. Ghirardo. *Oppositions* 25, 1982, pp. 21–51.
- Rudofsky, Bernard. *Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture*. University of New Mexico Press, 1987.
- *The Sacred Books of China. The Texts of Taoism. Part I: The Tao Teh King. The Writings of Kwang Ze Books I–XVII*. Trans. James Legge. London: Oxford University Press, 1981.
- Said, Edward W. *Orientalism*. London: Penguin Books, 2003.
- Schama, Simon. *Landscape and Memory*. New York: Vintage Books, 1996.
- Schumann-Bacia, Eva. *John Soane and the Bank of England*. New York: Princeton Architectural Press, 1991.
- Seager, Ashley. 'More petrol price rises on way', *The Guardian*, 8 May 2004.
- Seife, Charles. *Zero, the Biography of a dangerous idea*. London: Souvenir Press, 2000.
- Senagala, Mahesh. 'Speed and Relativity: Toward Time-like Architecture'. Baltimore: Conference paper for the 89th ACSA Annual Meeting Proceedings, 2001, pp. 1–5. [www.mahesh.org/articles/speedrelativity.pdf](http://www.mahesh.org/articles/speedrelativity.pdf)
- Sers, Philippe and Escande, Yolaine. *Résonance intérieure: Dialogue sur l'expérience artistique et sur l'expérience spirituelle en Chine et en Occident*. Saints-Geosmes: Klincksieck, 2003.
- Sharr, Adam. *Heidegger for architects*. London, New York: Routledge, 2009.
- Silburn, Lilian (ed.). *Le Vide, Expérience spirituelle en Occident et en Orient -2, Recueils de textes et d'études*. Paris: Ed. des Deux Océans/ HERMES, 1981.
- Siren, Osvald. *Gardens of China*. New York: The Ronald Press Company, 1949.
- Slive, Seymour. *Dutch painting 1600–1800*. London and New Haven: Pelican History of Art and Yale University Press, 1995.
- Summerson, John. *Art and Architecture in Britain, 1530 to 1830*. Harmondsworth: Penguin Books, 1970.
- Sutton, Peter C. (ed.). *Masters of Seventeenth Century Dutch Landscape Painting*. Exhibition catalogue. Boston, Mass.: Museum of Fine Arts, 1987.
- Suzuki, D.T. *Zen and Japanese Culture*. New York: Bollingen/Princeton University Press, 1970.
- Tanizaki, Junichiro. *Eloge de l'Ombre*. Trans. René Sieffert. Paris: Publications Orientalistes de France, 1993.
- Taylor, Joshua C. (ed.). *Nineteenth-Century Theories of Art*. Berkeley and Los Angeles, Calif.: University of California Press, 1987.
- Thacker, Christopher. *The History of Gardens*. Beckenham: Croom Helm, 1979.
- Thomas, Joe. 'An Oily Problem', *Investors' Chronicle*, 7 May 2004.
- Thomas Mitchell, W. J. (ed.). *Landscape and Power*. Chicago, Ill.: University of Chicago Press, 2002.
- Thys, Jean-Louis (ed.). 'Brussels-Europe Area, Ministry of the Brussels Region, administration for town planning and national development'. Brussels: CERAU, 1988.
- Tsai, Eugenie and Butler, Cornelia (eds). *Robert Smithson*. Berkeley, Los Angeles and London: University of California Press, 2004.
- Tufte, Edward Rolf. *Envisioning Information*. Cheshire, Conn.: Graphic Press, 1990.

- van der Ryn, Sym and Cowan, Stuart. *Ecological Design*. Washington, DC and Covelo, Calif.: Island Press, 1996.
- van Roojen, Pepin. *The Agile Rabbit Book of Historical and Curious Maps*. Amsterdam: Agile Rabbit Editions and Pepin Press, 2005.
- von Erdberg, Eleanor. *Chinese Influence on European Garden Structures*. New York: Hacker Art Books, 1985.
- Webb, Michael. *Temple Island*. Exhibition catalogue. London: AA Publications, 1987.
- Weijermars, Ruud, Mulder-Blanken, Carla W. and Wiegers, Jaap. 'Growth rate observation from the moss-built Checa travertine terrace, central Spain'. *Geological Magazine*, vol. 123. Cambridge: Cambridge University Press, 1986.
- Whately, Thomas. *Observations on Modern Gardening (1770)*. New York: Garland Publishing, 1982.
- Williamson, Tom. *Polite Landscapes, Gardens & Society in eighteenth-century England*. Stroud: Sutton Publishing, 1995.
- Wilson, Peter. *Western Objects Eastern Fields: Recent Projects by the Architekturbüro Bolles Wilson*. London: AA Publications, 1989.
- Wilton-Ely, John. *Piranesi, Paestum & Soane*. London: Azimuth Editions, 2002.
- Woodward, Christopher. *In Ruins*. London: Chatto & Windus, 2001.
- Wu, Nelson I. *Chinese and Indian Architecture, the City of Man, the Mountain of God and the Realm of the Immortals*. London and New York: Prentice-Hall International, 1963.
- Xin, Yang, Barnhart, Richard M., Chongzheng, Nie, Cahill, James, Shaojun, Lang and Hung, Wu. *Three Thousand years of Chinese painting*. New Haven & London: Yale University Press, 1997.
- Xin, Yang and Surchamp, Dom Angelico. *L'Architecture*. Paris: Desclée de Brouwer, 2000.
- Yeang, Kenneth. *Bioclimatic Skyscrapers*. London: Artemis, 1994.
- Yoon, Hong-key. *Geomantic relationships between culture and nature in Korea*. Shihlin, Taipei, Formosa: The Orient Cultural Service, 1976.
- Zhou, Chen Cong. *On Chinese Gardens*. Shanghai: Tongji University Press, 1985.

#### Website bibliography

- [www.bbc.co.uk/news/](http://www.bbc.co.uk/news/)
- <http://www.bio.umass.edu/biology/conn.river/mosses.html>
- <http://www.britishebryologicalsociety.org.uk>
- [www.cdm-regulations-uk.co.uk](http://www.cdm-regulations-uk.co.uk)
- [www.cor.europa.eu](http://www.cor.europa.eu)
- [www.crosshatchling.co.uk](http://www.crosshatchling.co.uk)
- [www.defra.gov.uk](http://www.defra.gov.uk)
- [www.europa.eu](http://www.europa.eu)
- [www.exploration-architecture.com](http://www.exploration-architecture.com)
- [www.folk.uio.no/dagkd/Publications/EPsL\\_07/hammer\\_epsL07.pdf](http://www.folk.uio.no/dagkd/Publications/EPsL_07/hammer_epsL07.pdf)
- [www.fys.uio.no/~dagkd/Travertine/index.html](http://www.fys.uio.no/~dagkd/Travertine/index.html)
- [www.historical-studies.unimelb.edu.au/bernardsmith/lectures/BSmith-Picturesque2.pdf](http://www.historical-studies.unimelb.edu.au/bernardsmith/lectures/BSmith-Picturesque2.pdf)
- [www.hse.gov.uk/construction/cdm/dos-and-donts.htm](http://www.hse.gov.uk/construction/cdm/dos-and-donts.htm)
- [www.inspiringcities.org/index.php?id=18835&type=article](http://www.inspiringcities.org/index.php?id=18835&type=article)
- [www.londonair.org.uk](http://www.londonair.org.uk)
- [www.murvegetalpatrickblanc.com](http://www.murvegetalpatrickblanc.com)
- [www.philipperahm.com](http://www.philipperahm.com)
- [www.powerof10.com](http://www.powerof10.com)
- [www.robertsmithson.com/essays/entropy\\_and.htm](http://www.robertsmithson.com/essays/entropy_and.htm)
- [www.ucl.ac.uk/portico](http://www.ucl.ac.uk/portico)
- [www.unece.org](http://www.unece.org)
- [www.weather.herald.com](http://www.weather.herald.com)
- [www.wright-house.com/religions/confucius/Analects.html](http://www.wright-house.com/religions/confucius/Analects.html)





Notes

## Introduction

1. Back in 1997, I worked as an intern in the architectural division of this particular office which is composed of an art section dealing with Korean traditional culture (*Samulnori* –folkloric music and dance, puppetry ...), an architecture office and a music recording studio.
2. Korean karaoke.
3. See also Maalouf, *Les Identités Meurtrières*.
4. 'The unbearable lightness of being' is one of my favourite expressions, borrowed from Milan Kundera's book.
5. These notions are mostly propagated in Europe by the budding of eastern religions such as Buddhism and Taoism.
6. Duhem, pp. 369–392.
7. Ibid., p. 370.
8. OBRA Architects, 'Speculations', [www.obraarchitects.com/writing](http://www.obraarchitects.com/writing)
9. It is in this perspective that the hyphen symbol will be inserted between words in this thesis. By contrast, the forward slash will be used to emphasize the dynamic oscillation existing between the complementary poles like Yin/Yang, rather than to describe the western dualist or dichotomist positions.
10. [www.exploration-architecture.com](http://www.exploration-architecture.com), on Seawater Greenhouse.
11. Ibid.
12. Ibid.
13. Term borrowed from Exploration architects.

## I. Theory of the Void

### 1. The Hyphenation of the Oriental Void and Chinese Traditional Landscape Painting

1. Lao-Tzu, *Tao Te King : Le Livre de la voie et de la vertu*, cited by Cheng, *Vide et Plein*, p. 59.
2. Cheng, *Vide et Plein*, p. 59.

3. Legge, pp. 12–33.
4. Capra, p. 213.
5. Cheng, *Vide et Plein*, pp. 59–60.
6. Ibid., p. 61. It is to be noticed that this 'nodal point' can be compared to the 'inflexion point' of the Japanese philosophy described by Buci-Glucksmann in her book *L'esthétique du temps au Japon* (2001), pp. 40–41. See also Jullien, *Le détour et l'accès*.
7. Quoted by Capra, p. 215.
8. Quote from the eighteenth-century painter Fan Chi's *Kuo-yun-lu hua-lun*, *Souffle-Esprit*, p. 39.
9. See also Yang Xin, 'La beauté des pierres', *L'Architecture*, pp. 33–37.
10. Buci-Glucksmann, *L'esthétique du temps au Japon*, p. 36. See also Cohen, *Comme un sublime esquif ...*
11. Xie He, *Guhua Pinlu (The ranking of ancient paintings)*, mentioned by Xin in 'Approaches to Chinese Painting', *Three Thousand Years of Chinese Painting*, p. 2.
12. Zhang Yanyuan, *Lidai Minghua Ji (Record of famous paintings of successive dynasties)*, mentioned by Yang Xin in 'Approaches to Chinese Painting', *Three Thousand Years of Chinese Painting*, p. 2.
13. Richard M. Barnhart, 'The Five Dynasties (907-960) and the Song Period (960–1279)', *Three Thousand Years of Chinese Painting*, p. 123. See also *Fantastic Mountains, Chinese Landscape Painting from the Shanghai Museum*.
14. Quoted by Philippe Sers and Yolaine Escande, pp. 97–98. See also Jullien, *Eloge de la fadeur*.
15. Pu Yen-t'u, extract from *Hua-hsueh hsin-fa wen-ta (Discussion on the spirit of painting)*, in *Souffle-Esprit*, p. 42.
16. Ibid., p. 42.
17. Yang Xin, 'Approaches to Chinese Painting', *Three Thousand Years of Chinese Painting*, p. 2. This is similar to the 'plumbing space' working method proposed by James Turrell. See Pluot, *James Turrell*.
18. This concept is further developed in Anne Cheng, *Histoire de la pensée Chinoise*.

19. Ibid., p. 2.
20. Ibid., p. 2.
21. Philippe Sers and Yolaine Escande, pp. 54–55.
22. Cheng, *Vide et Plein*, p. 73.
23. Ibid., p. 80.
24. Quoted in Cheng, *Vide et Plein*, p. 75.
25. Ibid., p. 90.
26. Wang Yu, *Tung chuang lun-hua* and Shen Tsung-ch'ien, *Chieh-chou hsueh-hua pien*, extracts found in *Souffle-Esprit*, p. 51 and p. 175.
27. *The Confucian Analects*, Book VI, 23 found on [www.wright-house.com/religions/confucius/Analects.html](http://www.wright-house.com/religions/confucius/Analects.html)
28. Cheng, *Vide et Plein*, p. 98.
29. Ibid., p. 106.
30. Quoted in Buci-Glucksmann, *L'esthétique du temps au Japon*, p. 104.
31. Philippe Sers and Yolaine Escande, pp. 162–163 and p. 187.
32. Yang Xin, p. 4.
33. Ibid., p. 4.
34. This position on the subject of the 'otherness' is also discussed in *Orientalism* by Edward W. Said.
35. Catherine Pagani, 'Europe in Asia: The impact of Western Art and Technology in China', in *Encounters*, p. 304.
36. Ibid., p. 306.
37. Ibid., p. 306.
38. Richard E. Strassberg, 'War and Peace: Four Intercultural Landscapes', *China on Paper*, p. 109.
39. Gauvin Alexander Bailey, 'Religious Encounters: Christianity in Asia' in *Encounters*, p. 121.
40. Richard E. Strassberg, 'War and Peace: Four Intercultural Landscapes', *China on Paper*, pp. 108–109.

41. Zou Yigui, 'Xiaoshan Huapu' (Catalogue of Landscape Paintings), cited by Wang Bomin in *Zhongguo Huihua Shi* (History of Chinese Painting), p. 552.
42. Zou Yigui, 'Xiaoshan huapu' (Catalogue of Landscape Paintings), cited by Mayching Kao in 'European Influences in Chinese Art, Sixteenth to Eighteenth Centuries' in *China and Europe: Images and Influence in Sixteenth to Eighteenth Centuries*, p. 273.
43. Richard E. Strassberg, 'War and Peace: Four Intercultural Landscapes', *China on Paper*, p. 90.
44. W. R. Sargent, 'Asia in Europe: Chinese Paintings for the West' in *Encounters*, p. 278.
45. James Cahill, 'Approaches to Chinese painting, Part II' in *Three Thousand Years of Chinese Painting*, p. 5.
46. Alexander Cozens, 'A New Method of Assisting the Invention in Drawing Original Compositions of Landscape' (1785), extract from *Nineteenth-Century Theories of Art*, p. 63. See also Schama, *Landscape and Memory*.
47. Oppé, p. 180.
48. Malenfer Ortiz, p. 101.
49. Alexander Cozens, 'A New Method of Assisting the Invention in Drawing Original Compositions of Landscape' (1785), extract from *Nineteenth-Century Theories of Art*, pp. 64–65.
50. Meyer, p. 36.

## 2. The Oriental Architecture of the Void

1. Chang, *The Japan Architect* 8411/12, p. 98.
2. Bussagli, p. 46.
3. Corrin and Kwon, p. 33.
4. This dichotomy results from the Taoist principle of duality in architecture, which again allows a fluid evolution of situations. See also Yoon, *Geomantic relationships between culture and nature in Korea*.



5. Feng and English, ch. 11.
6. Ih Tiao Chang, p. 7.
7. OBRA Architects, 'Speculations', [www.obraarchitects.com/writing](http://www.obraarchitects.com/writing)
8. Chang, *The Japan Architect* 8409, p. 62.
9. Ibid., pp. 64–67.
10. Feng and English, ch. 28.
11. Xin, Surchamp, pp. 32–33.
12. Choi et al., p. 206.
13. Drexler, p. 211.
14. Hay, p. 4.
15. Chang, *The Japan Architect* 8405, p. 68.
16. Drexler, pp. 58–59.
17. Isozaki and Oshima, p. 172.
18. Isozaki and Matsuoka, p. 13. See also Berque, p. 258.
19. Chang, *The Japan Architect* 8407, p. 63.
20. D. T. Suzuki, pp. 183–199.
21. Reischauer, pp. 199–210.
22. Ih Tiao Chang, p. 54.
23. Ibid., p. 55.
24. Buci-Glucksmann, *L'esthétique du temps au Japon*, pp. 46–48.
25. Goldschmidt, p. 25.
26. Ih Tiao Chang, pp. 5–6.
27. Buci-Glucksmann, *L'esthétique du temps au Japon*, p. 48.
28. Chang, *The Japan Architect* 8404, p. 64.
29. Pascal, 'Pensées':72, section II.
30. Hay, pp. 17–18.

### 3. The Occidental Void

1. Paul Shih-yi Hsiao, 'Heidegger and Our Translation of the Tao Te Ching', *Heidegger and Asian Thought*, pp. 93–104.
2. David E. Cooper, 'Chuang Tzu', *Fifty Key Thinkers on the Environment*, p. 11.
3. Pantheism is the belief that all things and forces in the Universe are a manifestation of God.
4. Otto Pöggeler, 'West-East Dialogue: Heidegger and Lao-tzu', *Heidegger and Asian Thought*, p. 49.
5. Duhem, pp. 369–371.
6. Johannis Hennon, *Physicorum*, lib IV, quaest. III, dictum 2m, fol.90, col.a, quoted by Duhem, p. 417.
7. Jammer, pp. 6–7.
8. Rahm, pp. 35–36. See also Didi-Hubermann, *Génie du non-lieu*.
9. Heidegger, 'The Thing', *Poetry, Language, Thought*, p. 169.
10. Lao-Tzu, *Tao Te Ching*, ch. 11. Lau's translation is chosen over Feng and English's translation found in ch. 2, para. 1.2. His usage of the word 'nothing' suits better the philosophical context of this chapter rather than usage of the word 'space' chosen by Feng and English, which is better adapted for an architectural context.
11. Otto Pöggeler, 'West-East Dialogue: Heidegger and Lao-tzu', *Heidegger and Asian Thought*, pp. 61–62.
12. Sharr, p. 30. See also Heidegger, *Remarques sur art-sculpture-espace*.
13. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, pp. 147–148.
14. Sharr, pp. 43–45.
15. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, p. 147.
16. Otto Pöggeler, 'West-East Dialogue: Heidegger and Lao-tzu', *Heidegger and Asian Thought*, p. 61.

17. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, pp. 156–157.
18. Sharr, pp. 37–38.
19. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, p. 145.
20. Sharr, p. 40.
21. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, p. 149.
22. Ibid., pp. 144–147.
23. Ibid., p. 145.
24. Ibid., p. 151–152.
25. Ibid., p. 152.
26. Ibid., p. 155. Heidegger's 'location' is understood as place in this thesis, and my use of 'location' in this context refers to the surrounding environment, the landscape.
27. Ibid., p. 155.
28. Ibid., p. 152.
29. Ibid., p. 152.
30. Ibid., p. 156.
31. Ibid., p. 150. See also Norberg-Schulz, *Kahn, Heidegger et le langage de l'architecture*.
32. de Beistegui, p. 90.
33. Sharr, p. 83.
34. Hofstadter, p. xiii.
35. Heidegger, 'Building Dwelling Thinking', *Poetry, Language, Thought*, p. 144.
36. Simon P. James, 'Heidegger', *Fifty Key Thinkers on the Environment*, p. 190.
37. This actualization is triggered by a creative intelligence that Aristotle named 'Nature' which, by extension, can be understood

as God. However I wish to strip this particular theory bare of all theological connotations to concentrate on its basic principles.

38. The words 'virtual' and 'virtuality' in architecture will be used in this philosophical sense, as opposed to the meaning referring to the simulation of reality allowed by computer science technologies.
39. Buci-Glucksmann, *L'esthétique du temps au Japon*, p. 24.
40. Epoch Group, 'Commentary on the Communist Party – Part 6, On How the Chinese Communist Party Destroyed Traditional Culture', *The Epoch Times*, 20 December 2004 ([www.theepochtimes.com/news/4-12-20/25087.html](http://www.theepochtimes.com/news/4-12-20/25087.html)). This is part of a special editorial series *Nine Commentaries on the Communist Party* published by *The Epoch Times*, Broad Press Inc, 2005.
41. Gropius, p. 47.
42. Ibid., pp. 49–50.
43. Ibid., p. 48.
44. Ibid., p. 50.
45. Ibid., p. 51.
46. Ibid., p. 47. See also André Corboz, 'L'architecture moderne face à la tradition japonaise', *Japon*, pp. 3–5.
47. Drexler, p. 41.
48. Gropius, p. 48.
49. Rahm, p. 62.

## II. Hyphens

1. See also Introduction, para. 2.2.
2. See also Part I, ch. 1, para. 1.3 and ch. 2, para. 3.3.

## 1. The Moss

1. Platform is a multidisciplinary group that aims at denouncing environmental and social issues through artistic and educative interventions.
2. The endohydric mosses possess a well-developed internal water-conductive tissue which transfers the water reserves from the base of the moss to the actively photosynthesizing leaves at the apex.
3. The ectohydric mosses absorb water readily by the stem and leaves, but there is little internal conducting tissue. Often external capillarity conducting systems exist in these mosses by which the water is distributed to different parts of the moss.
4. Richardson, p. 17.
5. This paragraph is mostly based on research made by D.H.S. Richardson, explained in *The Biology of Mosses* (1981).
6. Richardson, p. 193.
7. See also Part III, ch. 3, para. 3.2.
8. Richardson, pp. 137–138.
9. Hagishima, Tanimoto and Takao, pp. 297–303.
10. See also Part III, ch. 1.

## 2. The Ruins

1. The thesis will leave aside ruins as an outcome of wars.
2. Macaulay, pp. 1–2.
3. Ibid., p. 20.
4. Watkin, 'Built Ruins: The Hermitage as a Retreat', *Visions of Ruin*, p. 5.
5. Macaulay, pp. 18–20.
6. Delbeke, De Meyer, Rogiers and Verschaffel, p. 11.
7. Woodward, *In Ruins*, p. 118.
8. Dixon Hunt and Willis, p. 35.

9. Woodward, *In Ruins*, p. 120.
10. Craig, pp. 185–186.
11. Extract from Knight, *The Genius of the Place*, cited by Dixon Hunt in *Gardens and the Picturesque*, p. 187.
12. Ballantyne, p. 305.
13. Hussey, pp. 12–13.
14. Cited by Macaulay, p. 19.
15. Extract regarding Young's northern tour cited by Hussey, p. 195.
16. Home, *Elements of Criticism* (1762), cited by Macaulay, p. 25.
17. Ibid., p. 25.
18. Cited by Macaulay, p. 23.
19. Woodward, 'Scenes from the Future', *Visions of Ruin*, p. 15.
20. Janovitz, pp. 2–5.
21. Quoted by Dixon Hunt in *The Picturesque Garden in Europe*, pp. 44.
22. Dixon Hunt, *Gardens and the Picturesque*, p. 184.
23. Helen Dorey, 'Crude Hints', *Visions of Ruin*, p. 55.
24. Ibid., p.55.
25. Helen Dorey, 'Crude Hints', *Visions of Ruin*, pp. 56-57.
26. Soane, 'Crude Hints towards a History of my House', in Dorey, *Visions of Ruin*, pp. 72–73.
27. Ibid., p. 74.
28. Quoted by Helen Dorey in 'The Monk's Yard', *Visions of Ruin*, p. 51. See also Wilton-Ely, *Piranesi, Paestum & Soane*.
29. Abramson, 'The Building of the Bank of England, 1731-1833', pp. 425–429.
30. Dal Co and Polano, pp. 41–52.
31. Riegl, p. 24.
32. Ibid., p. 38.



33. Smithson, 'A Tour of the Monuments of Passaic, New Jersey', *The Writings of Robert Smithson*, pp. 53–57.
34. [www.robertsmithson.com/essays/entropy\\_and.htm](http://www.robertsmithson.com/essays/entropy_and.htm)
35. See also Part I, ch. 2, para. 3.1 about the Japanese Ise Shrine.
36. See also Perez de Arce, *Urban transformation*.
37. Aikin, p. 266.
38. Flam, p. 122.
39. Forty, pp. 1–18.

### 3. The English Picturesque Landscape Garden

1. Knight, p. 148.
2. Dixon Hunt, *The Picturesque Garden in Europe*, p. 13.
3. Ibid., p. 13.
4. Ballantyne, p. 148.
5. Hussey, pp. 9–10.
6. See also Part II, ch. 2, para. 2.
7. Joshua Reynolds, *Seven discourses on art*, Discourse III, delivered to the students of the Royal Academy on 14 December 1770.
8. Dixon Hunt, *Gardens and the Picturesque*, pp. 75–76.
9. Dixon Hunt and Willis, p. 7.
10. Ibid., p. 8.
11. Williamson, p. 63.
12. See also Part II, ch. 2, para. 2.
13. Hussey, p. 4.
14. Dixon Hunt, *The Picturesque Garden in Europe*, pp. 14–15.
15. Dixon Hunt and Willis, pp. 16–17.
16. Ibid., p. 17.
17. Dixon Hunt, *The Picturesque Garden in Europe*, p. 88.
18. Ibid., p. 15.
19. Home, *Elements of criticism* (1762) quoted by Dixon Hunt, *The Picturesque Garden in Europe*, p. 26.
20. Quoted by Dixon Hunt and Willis, p. 13.
21. Williamson, p. 63.
22. Ibid., pp. 63–64.
23. See also part II, ch. 2, para. 2.1.2.
24. Dixon Hunt, *Gardens and the Picturesque*, p. 122.
25. Dixon Hunt, *The Picturesque Garden in Europe*, p. 88.
26. Dixon Hunt and Willis, p. 38.
27. Whately, pp. 119–120.
28. Ballantyne, p. 286.
29. Dixon Hunt, *Gardens and the Picturesque*, p. 182.
30. This river was ultimately not inserted in the landscape as the water source in that location was not abundant enough to sustain a river or a lake.
31. Williamson, pp. 77–79.
32. Dixon Hunt and Willis, p. 38.
33. Chambers, p. v.
34. Dixon Hunt, *The Picturesque Garden in Europe*, p. 66 and p. 74.
35. Gilpin, *Remarks on Forest Scenery* (1791), extract from *The Genius of the Place*, p. 339.
36. Dixon Hunt and Willis, p. 31.
37. Ibid., pp. 31–32.
38. Ballantyne, p. 285.
39. Quoted by Dixon Hunt, *The Picturesque Garden in Europe*, p. 75.
40. Dixon Hunt and Willis, p. 32.

41. Dixon Hunt, *The Picturesque Garden in Europe*, p. 78–79.
42. Dixon Hunt and Willis, p. 33.
43. Ibid., pp. 32–33.
44. See also Part II, ch. 4, para. 5.
45. Keswick, *The Chinese Garden*, p. 15.
46. Temple, *Upon the gardens of Epicurus or of gardening in 1685* (1692), in *Five Miscellaneous Essays by Sir William Temple*, pp. 29–30.
47. Murray, pp. 208–213.
48. Ibid., pp. 208–213.
49. Richard E. Strassberg, 'War and Peace: Four Intercultural Landscapes', *China on Paper*, pp. 122–123.
50. Quoted by Hussey, p. 155. See also Baas, 'The Infinite Moment', *Smile of the Buddha*, pp. 13–17.
51. von Erdberg, p. 37.
52. Ibid., p. 36.
53. Attiret, 'Lettre à M. d'Assaut, 1er novembre 1743', quoted by Keswick, p. 9.
54. Williamson, p. 65.
55. Hirschfeld, p. 81.

#### 4. The Chinese Garden

1. See also Part I, ch. 1, para. 2.
2. Keswick, *The Chinese Garden*, p. 14.
3. Charles Jencks, 'Meanings of the Chinese Garden', *The Chinese Garden*, p. 198.
4. Cheng, *The Craft of Gardens*, pp. 46–47.
5. Charles Jencks, 'Meanings of the Chinese Garden', *The Chinese Garden*, pp. 195–196.
6. Keswick, *The Chinese Garden*, p. 73.
7. Keswick, Foreword to *The Craft of Gardens*, p. 21.
8. Thacker, p. 43. See also Part I, ch. 1, para. 3.2.
9. Hardie, 'Translator's Preface', *The Craft of Gardens*, p. 9 and Keswick, *The Chinese Garden*, p. 10.
10. Sirén, p. 20.
11. See also Part I, ch. I, para. 3.3.
12. Keswick, *The Chinese Garden*, p. 76.
13. Sirén, pp. 5–6.
14. Charles Jencks, 'Meanings of the Chinese Garden', *The Chinese Garden*, p. 196.
15. Ibid., pp. 195–196.
16. Keswick, *The Chinese Garden*, pp. 164–168.
17. Ibid., p. 155.
18. Sirén, p. 19.
19. Cheng, *The Craft of Gardens*, p. 112.
20. Keswick, *The Chinese Garden*, p. 158.
21. Cheng, *The Craft of Gardens*, pp. 104–107.
22. Li Li-Weng, 'Informal Records of Random Thoughts', in *Li Yu Ch'uan-Chi*, section 5, part 7.
23. Cheng, *The Craft of Gardens*, p. 109.
24. Thacker, p. 47.
25. Li Li-Weng, 'Informal Records of Random Thoughts', in *Li Yu Ch'uan-Chi*, section 5, part 7.
26. Wu, pp. 45–46. It is to be noticed that 'romantic' in this sentence is not related to the Romantic era, but rather is used in the sense of 'idealistic' or 'impalpable'.
27. Sirén, p3.
28. Lao-Tzu, *Tao Te Ching*, Book 1, no. XII.
29. Keswick, *The Chinese Garden*, p. 92.

30. Cheng, *The Craft of Gardens*, p. 96.
31. Ibid., pp. 112–119.
32. Keswick, *The Chinese Garden*, p. 94.
33. Sirén, p. 4.
34. Charles Jencks, 'Meanings of the Chinese Garden', *The Chinese Garden*, p. 217.
35. Keswick, *The Chinese Garden*, p. 125
36. Dixon Hunt and Willis, pp. 8–9.
37. See also Part I, ch. 2, para. 2.
38. See also Part I, ch. 2, para. 3.3.
39. See also Part II, ch. 1, conclusion.

### 5. Alexander Pope's Grotto

1. Beckles Willson, *Alexander Pope's Grotto in Twickenham*, p. 5 and p. 32.
2. Beckles Willson, *Mastiffs and Minerals in the life of Alexander Pope*, p. 1.
3. Quote from a letter by Pope to Edward Blount (1725), cited by Beckles Willson, *Alexander Pope's Grotto in Twickenham*, p. 11.
4. I'll use the word 'grotto' to designate both Pope's grotto and his subterranean way unless specified otherwise.
5. Extract from Pope's letter to Edward Blount (1725), cited by Beckles Willson, *Alexander Pope's Grotto in Twickenham*, p. 11.
6. Ibid., p. 11.
7. Morel, p. 10. See also Jones, *Follies and Grottoes*.
8. Beckles Willson, *Alexander Pope's Grotto in Twickenham*, p. 20
9. Thacker, p. 45. See also Part I, ch. 1, para. 2.

## III. Practice of the Void

### 1. The Bank's Barometer

1. See also Part I, ch. 1, para. 1 and 2.
2. Eva Schumann-Bacia, p. 21.
3. John Summerson, p. 470.
4. Abramson, pp. 425–429.
5. Schumann-Bacia, p. 116.
6. Ibid., pp. 120–122.
7. Joe Thomas, 'An Oily Problem', *Investors' Chronicle*, 7 May 2004.
8. Ashley Seager, 'More petrol price rises on way', *The Guardian*, 8 May 2004.
9. Jonathan Prynn, 'Record Petrol Prices', headline in the *Evening Standard*, 13 May 2004.
10. Their figures are available on [www.londonair.org.uk](http://www.londonair.org.uk)
11. Inspiring weather maps and satellite images were found in Büdel, *Climatic Geomorphology* and Lusignan and Kelly (eds), *Global weather prediction: the coming revolution*. Images that are evocative of moss were illustrated in this section while other pictures might have indirectly influenced the project's drawings.
12. DEFRA, the Government's Department for Environment, Food and Rural Affairs.
13. Grynstejn, Birnbaum, Speaks, 'Artist's writings: the weather forecast and now', in *Olafur Eliasson*, p. 141.
14. See also Part I, ch. 2, para. 3.3 and Gaston Bachelard, 'La dialectique du dehors et du dedans', *La poétique de l'espace*, pp. 191–207.

### 2. Sited Moss: Invading or Fading Architecture?

1. Extract from email bid for *Slade /Bartlett Summer Event, a day of site-specific conferencing*, sent by Florence Penny and Jane Rendell, 1 July 2004.



2. See also Part I, ch. 1, para. 3.3.
3. Cheng, *Vide et Plein*, p. 61, see also Part I, ch. 1, para. 1 and Buci-Glucksmann, *Esthétique de l'éphémère*.
4. Quote found on [www.ucl.ac.uk/portico](http://www.ucl.ac.uk/portico)

### 3. Ruining a Ruin

1. Chang, Japan Architect 8409, pp. 64–67.
2. The EEC was supplanted by the European Union (EU) ratified by the Maastricht Treaty in 1993. The EU is based upon the EEC's structure and widens its usual issues to monetary, legislative, military and foreign policy. It currently counts 27 member states.
3. The Council of the European Union is also known as the Council and was formerly known as the Council of Ministers.
4. This process of substitution is labelled 'gentrification'.
5. See also Part II, ch. 5, para. 4.
6. There are no reasons for adjacent buildings to be left to decay, given their role and location. So in the future of my project, they are considered to be roughly as they are today.
7. Growth rate observation of the moss-built Checa travertine terrace in central Spain, research by Weijermars, W. Mulder-Blanken and Wiegers, in *Geological Magazine* vol. 123, pp. 279–286.
8. Information found on [www.fys.uio.no/~dagkd/Travertine/index.html](http://www.fys.uio.no/~dagkd/Travertine/index.html) and [www.folk.uio.no/dagkd/Publications/EPsL\\_07/hammer\\_epsL07.pdf](http://www.folk.uio.no/dagkd/Publications/EPsL_07/hammer_epsL07.pdf)
9. Peat is mostly made from decaying sphagnum moss mixed together with other spongy plant materials that are used as fertilizer or fuel.
10. [www.crosshatchling.co.uk](http://www.crosshatchling.co.uk).
11. Quote of the artist found on [www.inspiringcities.org/index.php?id=18835&type=article](http://www.inspiringcities.org/index.php?id=18835&type=article)
12. Information provided by Jean-Luc Le Gouallec on [www.murvegetalpatrickblanc.com](http://www.murvegetalpatrickblanc.com). See also Dunnet, Kingsbury, *Planting*

*Green Roofs and Living Walls*, Leenhardt and Lambertini (eds), *Vertical Gardens* and Nemitz, *Transplant*.

13. United Nations Economic Commission for Europe.
14. See also Part I, ch. 1, para. 5.
15. This idea is based on the 1968 documentary made by Ray and Charles Eames on the relative scale of the universe in factors of ten.

### Thesis Conclusion

1. This recalls Rem Koolhaas, who explained that he was amazed by the working meetings he had with Japanese architects. They completely disregarded the degree of emergency of problems encountered on site and discussed structural issues side by side with a toilet detail.
2. See for example Fraser and Henmi, *Envisioning Architecture: An Analysis of Drawing*, Tuftes, *Envisioning Information*, van Rooijen, *The Agile Rabbit Book of Historical and Curious Maps*, Webb, *Temple Island* and Wilson, *Western Objects Eastern Fields*.
3. [www.cdm-regulations-uk.co.uk](http://www.cdm-regulations-uk.co.uk) and [www.hse.gov.uk/construction/cdm/dos-and-donts.htm](http://www.hse.gov.uk/construction/cdm/dos-and-donts.htm)
4. Ito, p. 82. See also Mathieu Copeland, 'Apprendre aux gens à faire le vide de leurs mémoires, entretien avec Claude Parent', *Vide: une retrospective*, pp. 445–451.
5. Attlee and Lefevre, p. 53.
6. See Masao Miyoshi, 'Outside Architecture', *Trespases*, pp. 151–157. See also van der Ryn and Cowan, *Ecological Design*.
7. Such input could be observed in 'Brussels, Capital of Europe', a report made by The Group of Policy Advisers (GOPA) and the European Commission in October 2001. Those advisers included among others Rem Koolhaas, Ignacio Juan Vidarte, Maryon McDonald and Umberto Eco who proposed their perception and visions of Brussels as capital of Europe.